

The Iron-Neon Hollow-Cathode Spectrum*

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Over 4000 wavelengths are listed between 1900 and 9000 Å for Fe I, Fe II, Ne I and Ne II lines measured in a hollow cathode discharge tube with iron electrodes and a neon gas filling. Photoelectric traces between 2400 and 5700 Å on a semiquantitative intensity scale are also included. For Fe I, energy values for 124 even and 240 odd levels have been computed. These have been used to calculate Ritz standards for most of the Fe I lines.

Key words: Hollow cathode; iron; neon; wavelength standards

For the past 20 years the Spectroscopy Laboratory at The Johns Hopkins University has been using an iron hollow-cathode discharge tube for spectroscopic wavelength standards and as a stable source for branching-ratio measurements. This paper is a progress report on the development of Ritz standards for Fe I, but also includes extensive data on Fe II, Ne I and Ne II which were obtained along the way.

The spectrum lines of neutral iron have long been used by spectroscopists as convenient laboratory wavelength standards. The Pfund atmospheric dc arc [Pfund, 1908] was for many years the best available source of Fe I lines, and was adopted by Commission 14 of the International Astronomical Union as a source of secondary standard wavelengths. A compilation of the atmospheric arc wavelengths was made by Russell and Moore [1944] from the best material available at that time.

It was known that line shifts and broadening from the effects of electric fields and atmospheric pressure were present and that many otherwise useful lines had to be avoided. As interest in problems requiring high resolution developed, coincident with availability of better gratings and more powerful spectrographs, the inadequacies of an atmospheric arc became more serious. Vacuum arcs [Burns and Walters, 1929 and 1931] and hollow-cathode discharge tubes [Williams and Middleton, 1939] were known to give much sharper lines but the required evacuating system was inconvenient.

A sealed-off discharge tube using a hollow iron cathode with a 3.5 torr filling of rare gas, preferably neon, becomes an excellent source of sharp spectral lines suitable for wavelength calibration of large grating

spectrographs in a routine manner: a uranium metal getter in a side-arm may be used to reduce contamination from out-gassing [Crosswhite et al., 1955]. The Doppler broadening is not of serious consequence for grating instruments. The intensity of the spectrum is adequate and the lifetime (several hundred hours) long enough to give years of service in a normal installation. Tube currents from 90 to 400 mA were used in the experiments described here.

Wavelength measurements were carried out in several steps, the first being a series of interferometric ones with resolution limit of about 0.02 cm^{-1} [Stanley and Dieke, 1955; Crosswhite, 1958]. These were supplemented by measurements of a microwave-excited iron halide tube [Stanley and Meggers, 1957], which appear to be indistinguishable from those of the hollow-cathode lamp. These 367 lines were then used to determine 36 even and 69 odd energy level values with a precision of about 0.002 cm^{-1} . In tables I and II these levels are identified by an asterisk.

From these energy level values a set of average wavelengths was calculated. In addition to the original group of lines this set could be expanded to include additional lines of about twice this number, making up a set in sufficient quantity as to be useful for internal standards in further exposures with grating spectrographs.

Above about 2500 Å this could be done in a conventional way by interpolating new measurements between values of the above Ritz standards. Two spectrographs were used, the more useful being a five-meter plane-grating Jarrell-Ash spectrograph [Dieke and Heath, 1965], designed by W. G. Fastie [Fastie, 1963]. This instrument contains a 254 mm plane grating blazed near six microns (59°). Separation of orders is accomplished by using a small plane-grating predisperser. These measurements were all made with

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the spectrograph evacuated. The accuracy of the measurements is comparable to the previous interferometric ones, being limited by the Doppler broadening in the source.

Below 2500 Å the occurrence of suitable Ritz standards is irregular, and the following method was used [Crosswhite and Jones, 1974]. The predisperser was taken out of the beam and replaced by a specially-designed total-internal-reflection filter [Crosswhite, 1969] which could be adjusted so that only wavelengths below a set value would appear in the exposure. Longer wavelengths are attenuated by twelve reflections within a pair of high purity quartz prisms. Shorter wavelengths pass through unattenuated and undeviated. Exposures of several overlapping orders

can thus be obtained free from interference from longer wavelengths (lower orders). Two sets of exposures were taken, one with the cutoff wavelength fixed at 2600 Å and the other at 2300 Å.

Tests of self-consistency of measurements made with overlapping orders, for Ritz standards between 2500 and 4500 Å, showed no discrepancies for this spectrograph. The lines are very symmetric and the dispersion is high enough that photographic plate imperfections are not a factor. The demonstrated resolving power of 1,000,000 at 2537 Å [Kielkopf, 1973] is more than adequate for this source. As this is near the theoretical resolving power, it is felt that the method of overlapping orders gives no problems over the limited range of orders used here.

TABLE I. Even energy levels of Fe I

Designation	Level (cm ⁻¹)	Configuration	Designation	Level (cm ⁻¹)	Configuration	Designation	Level (cm ⁻¹)	Configuration
<i>a</i> ⁵ D ₄	0.000*	3d ⁶ 4s ²	<i>a</i> ³ D ₂	26 623.730	3d ⁷ 4s	<i>f</i> ⁷ D ₂	50 998.641	3d ⁶ 4s4d
<i>a</i> ⁵ D ₃	415.932*	3d ⁶ 4s ²	<i>b</i> ³ H ₄	26 627.604	3d ⁷ 4s	<i>f</i> ⁷ D ₁	51 048.113	3d ⁶ 4s4d
<i>a</i> ⁵ D ₂	704.004*	3d ⁶ 4s ²	<i>a</i> ¹ P ₁	27 543.004	3d ⁷ 4s	<i>f</i> ⁵ F ₅	51 103.187	3d ⁶ 4s4d
<i>a</i> ⁵ D ₁	888.179*	3d ⁶ 4s ²	<i>a</i> ¹ D ₂	28 604.606	3d ⁷ 4s	<i>e</i> ⁷ F ₃	51 148.859	3d ⁶ 4s4d
<i>a</i> ⁵ D ₀	978.072*	3d ⁶ 4s ²	<i>a</i> ¹ H ₅	28 819.946	3d ⁷ 4s	<i>e</i> ⁵ S ₂	51 148.883	3d ⁶ 4s4d
<i>a</i> ⁵ F ₅	6928.266*	3d ⁷ 4s	<i>a</i> ¹ I ₆	29 313.003	3d ⁶ 4s ²	<i>e</i> ⁷ F ₄	51 192.270	3d ⁶ 4s4d
<i>a</i> ⁵ F ₄	7376.760*	3d ⁷ 4s	<i>b</i> ³ D ₁	29 320.028	3d ⁶ 4s ²	<i>e</i> ⁷ F ₁	51 207.991	3d ⁶ 4s4d
<i>a</i> ⁵ F ₃	7728.056*	3d ⁷ 4s	<i>b</i> ³ D ₂	29 356.740	3d ⁶ 4s ²	<i>e</i> ⁵ G ₃	51 219.017	3d ⁶ 4s4d
<i>a</i> ⁵ F ₂	7985.780*	3d ⁷ 4s	<i>b</i> ³ D ₃	29 371.811	3d ⁶ 4s ²	<i>e</i> ⁷ G ₅	51 228.555	3d ⁶ 4s4d
<i>a</i> ⁵ F ₁	8154.710*	3d ⁷ 4s	<i>b</i> ¹ G ₄	29 798.933	3d ⁶ 4s ²	<i>e</i> ³ D ₃	51 294.222*	3d ⁶ 4s5s
<i>a</i> ³ F ₄	11 976.234*	3d ⁷ 4s	<i>c</i> ³ F ₄	32 873.619	3d ⁸	<i>e</i> ⁷ F ₂	51 331.044	3d ⁶ 4s4d
<i>a</i> ³ F ₃	12 560.930*	3d ⁷ 4s	<i>c</i> ³ F ₃	(33 412.706)	3d ⁸	<i>e</i> ⁷ G ₄	51 334.909	3d ⁶ 4s4d
<i>a</i> ³ F ₂	12 968.549*	3d ⁷ 4s	<i>c</i> ³ F ₂	(33 765.291)	3d ⁸	<i>g</i> ⁵ D ₄	51 350.491	3d ⁶ 4s5s
<i>a</i> ⁵ P ₃	17 550.175*	3d ⁷ 4s	<i>e</i> ⁷ D ₅	42 815.857*	3d ⁶ 4s5s	<i>e</i> ⁵ G ₂	51 370.130	3d ⁶ 4s4d
<i>a</i> ⁵ P ₂	17 726.981*	3d ⁷ 4s	<i>e</i> ⁷ D ₄	43 163.327*	3d ⁶ 4s5s	<i>e</i> ⁷ G ₃	51 460.516	3d ⁶ 4s4d
<i>a</i> ⁵ P ₁	17 927.376*	3d ⁷ 4s	<i>e</i> ⁷ D ₃	43 434.629*	3d ⁶ 4s5s	<i>f</i> ⁵ F ₄	51 461.672	3d ⁶ 4s4d
<i>a</i> ³ P ₂	18 378.181*	3d ⁶ 4s ²	<i>e</i> ⁷ D ₂	43 633.534*	3d ⁶ 4s5s	<i>e</i> ⁷ G ₂	51 539.712	3d ⁶ 4s4d
<i>a</i> ³ H ₆	19 390.164	3d ⁶ 4s ²	<i>e</i> ⁷ D ₁	43 763.980*	3d ⁶ 4s5s	<i>e</i> ⁷ S ₃	51 570.084	3d ⁶ 4s4d
<i>a</i> ³ P ₁	19 552.473	3d ⁶ 4s ²	<i>e</i> ⁵ D ₄	44 677.004*	3d ⁶ 4s5s	<i>f</i> ⁵ F ₃	51 604.102	3d ⁶ 4s4d
<i>a</i> ³ H ₅	19 621.005	3d ⁶ 4s ²	<i>e</i> ⁵ D ₃	45 061.327*	3d ⁶ 4s5s	<i>f</i> ⁵ F ₂	51 705.007	3d ⁶ 4s4d
<i>a</i> ³ H ₄	19 788.245	3d ⁶ 4s ²	<i>e</i> ⁵ D ₂	45 333.875*	3d ⁶ 4s5s	<i>e</i> ³ D ₂	51 739.920*	3d ⁶ 4s5s
<i>a</i> ³ P ₀	20 037.813	3d ⁶ 4s ²	<i>e</i> ⁵ D ₁	45 509.150*	3d ⁶ 4s5s	<i>f</i> ⁵ F ₁	51 754.490	3d ⁶ 4s4d
<i>b</i> ³ F ₄	20 641.109	3d ⁶ 4s ²	<i>e</i> ⁵ F ₅	47 005.508*	3d ⁷ 5s	<i>g</i> ⁵ D ₃	51 770.554*	3d ⁶ 4s5s
<i>b</i> ³ F ₃	20 874.483	3d ⁶ 4s ²	<i>e</i> ⁵ F ₄	47 377.962*	3d ⁷ 5s	<i>e</i> ³ D ₁	52 039.886	3d ⁶ 4s5s
<i>b</i> ³ F ₂	21 038.985	3d ⁶ 4s ²	<i>e</i> ⁵ F ₃	47 755.539*	3d ⁷ 5s	<i>g</i> ⁵ D ₂	52 049.814	3d ⁶ 4s5s
<i>a</i> ³ G ₅	21 715.730*	3d ⁷ 4s	<i>e</i> ⁵ F ₂	48 036.666	3d ⁷ 5s	<i>e</i> ⁵ P ₂	52 067.459	3d ⁶ 4s4d
<i>a</i> ³ G ₄	21 999.127*	3d ⁷ 4s	<i>e</i> ⁵ F ₁	48 221.314	3d ⁷ 5s	<i>g</i> ⁵ D ₁	52 214.336	3d ⁶ 4s5s
<i>a</i> ³ G ₃	22 249.428	3d ⁷ 4s	<i>f</i> ⁷ D ₅	50 377.913	3d ⁶ 4s4d	<i>h</i> ⁵ D ₃	53 545.847	3d ⁷ 4d
<i>b</i> ³ P ₂	22 838.318	3d ⁷ 4s	<i>f</i> ⁵ D ₄	50 423.136*	3d ⁶ 4s4d	<i>e</i> ³ G ₃	53 739.433	3d ⁷ 4d
<i>b</i> ³ P ₁	22 946.808	3d ⁷ 4s	<i>e</i> ⁷ P ₄	50 475.287	3d ⁶ 4s4d	<i>f</i> ⁵ G ₄	53 768.969	3d ⁷ 4d
<i>b</i> ³ P ₀	23 051.742	3d ⁷ 4s	<i>e</i> ⁵ G ₆	50 522.946	3d ⁶ 4s4d	<i>g</i> ⁵ F ₃	53 830.974	3d ⁷ 4d
<i>b</i> ³ G ₅	23 783.614	3d ⁶ 4s ²	<i>f</i> ⁵ D ₃	50 534.391	3d ⁶ 4s4d	<i>f</i> ³ D ₂	54 066.758	3d ⁷ 4d
<i>b</i> ³ G ₄	24 118.814	3d ⁶ 4s ²	<i>e</i> ⁷ P ₃	50 611.260	3d ⁶ 4s4d	<i>g</i> ⁷ D ₄	54 124.741	3d ⁶ 4s6s
<i>c</i> ³ P ₂	24 335.759	3d ⁷ 4s	<i>f</i> ⁵ D ₂	50 698.625	3d ⁶ 4s4d	<i>h</i> ⁵ D ₁	54 132.550	3d ⁷ 4d
<i>b</i> ³ G ₃	24 338.762	3d ⁶ 4s ²	<i>e</i> ⁵ G ₅	50 703.866	3d ⁶ 4s4d	<i>f</i> ⁵ G ₃	54 161.132	3d ⁷ 4d
<i>a</i> ¹ G ₄	24 574.650	3d ⁷ 4s	<i>f</i> ⁷ D ₄	50 807.991	3d ⁶ 4s4d	<i>g</i> ⁵ F ₂	54 257.505	3d ⁷ 4d
<i>c</i> ³ P ₁	24 772.017	3d ⁷ 4s	<i>e</i> ⁷ F ₅	50 833.428	3d ⁶ 4s4d	<i>g</i> ⁵ F ₁	54 386.188	3d ⁷ 4d
<i>c</i> ³ P ₀	25 091.597	3d ⁷ 4s	<i>e</i> ⁷ P ₂	50 861.321	3d ⁶ 4s4d	<i>g</i> ⁷ D ₂	54 611.703	3d ⁶ 4s6s
<i>b</i> ³ H ₆	26 105.904	3d ⁷ 4s	<i>f</i> ⁷ D ₃	50 861.816	3d ⁶ 4s4d	<i>f</i> ³ F ₄	54 683.312	3d ⁷ 4d
<i>a</i> ³ D ₃	26 224.966	3d ⁷ 4s	<i>f</i> ⁵ D ₁	50 880.098	3d ⁶ 4s4d	<i>i</i> ⁵ D ₃	57 813.940	3d ⁶ 4s4d
<i>b</i> ³ H ₅	26 351.039	3d ⁷ 4s	<i>e</i> ⁷ G ₆	50 967.826	3d ⁶ 4s4d	<i>i</i> ⁵ D ₂	57 974.129	3d ⁶ 4s4d
<i>a</i> ³ D ₁	26 406.470	3d ⁷ 4s	<i>e</i> ⁵ G ₄	50 979.578*	3d ⁶ 4s4d	4 2	58 213.121	3d ⁶ 4s4d

TABLE II. Odd energy levels of Fe I

Designation	Level (cm ⁻¹)	Configuration	Designation	Level (cm ⁻¹)	Configuration	Designation	Level (cm ⁻¹)	Configuration
z^7D_5	19 350.892*	$3d^64s4p$	y^3D_1	38 995.730	$3d^74p$	z^3H_5	47 008.366*	$3d^64s4p$
z^7D_4	19 562.440*	$3d^64s4p$	x^5D_4	39 625.799*	$3d^64s4p$	w^3D_3	47 017.188	$3d^74p$
z^7D_3	19 757.033*	$3d^64s4p$	x^5D_3	39 969.844*	$3d^64s4p$	x^3F_3	47 092.707	$3d^74p$
z^7D_2	19 912.494*	$3d^64s4p$	y^7P_2	40 052.030	$3d^54s^24p$	z^3H_4	47 106.477*	$3d^64s4p$
z^7D_1	20 019.635*	$3d^64s4p$	y^7P_3	40 207.086	$3d^54s^24p$	w^3D_2	47 136.072	$3d^74p$
z^7F_6	22 650.421	$3d^64s4p$	x^5D_2	40 231.333*	$3d^64s4p$	u^5D_0	47 171.517	$3d^74p$
z^7F_5	22 845.868*	$3d^64s4p$	x^5F_5	40 257.308*	$3d^64s4p$	u^5D_1	47 177.225	$3d^74p$
z^7F_4	22 996.677*	$3d^64s4p$	x^5D_1	40 404.506	$3d^64s4p$	x^3F_2	47 197.014	$3d^74p$
z^7F_3	23 110.937*	$3d^64s4p$	x^5D_0	40 491.274	$3d^64s4p$	w^3D_1	47 272.016	$3d^74p$
z^7F_2	23 192.497*	$3d^64s4p$	x^5F_4	40 594.429*	$3d^64s4p$	w^5G_6	47 363.369	$3d^64s4p$
z^7F_1	23 244.834*	$3d^64s4p$	x^5F_3	40 842.151*	$3d^64s4p$	l^2	47 419.674	
z^7F_0	23 270.374	$3d^64s4p$	z^5S_2	40 894.986*	$3d^64s4p$	w^5G_5	47 420.229	$3d^64s4p$
z^7P_4	23 711.457*	$3d^64s4p$	x^5F_2	41 018.050*	$3d^64s4p$	z^1G_4	47 452.716	$3d^74p$
z^7P_3	24 180.864*	$3d^64s4p$	x^5F_1	41 130.627	$3d^64s4p$	y^3S_1	47 555.598	$3d^74p$
z^7P_2	24 506.919*	$3d^64s4p$	x^5P_3	42 532.736	$3d^64s4p$	w^5G_4	47 590.047	$3d^64s4p$
z^5D_4	25 899.987*	$3d^64s4p$	x^5P_2	42 859.771*	$3d^64s4p$	v^5F_5	47 606.095	$3d^64s4p$
z^5D_3	26 140.177*	$3d^64s4p$	y^5G_5	42 911.909*	$3d^64s4p$	w^5G_3	47 693.228	$3d^64s4p$
z^5D_2	26 339.691*	$3d^64s4p$	z^5H_5	(42 991.675)	$3d^64s4p$	x^3G_4	47 812.118	$3d^64s4p$
z^5D_1	26 479.376*	$3d^64s4p$	y^5G_4	43 022.975*	$3d^64s4p$	w^5G_2	47 831.150	$3d^64s4p$
z^5D_0	26 550.476*	$3d^64s4p$	x^5P_1	43 079.026	$3d^64s4p$	x^3G_3	47 834.218	$3d^64s4p$
z^5F_5	26 874.549*	$3d^64s4p$	z^5H_4	(43 108.914)	$3d^64s4p$	x^3G_5	47 834.542	$3d^64s4p$
z^5F_4	27 166.819*	$3d^64s4p$	y^5G_3	43 137.479	$3d^64s4p$	v^5F_4	47 929.999	$3d^64s4p$
z^5F_3	27 394.688*	$3d^64s4p$	y^5G_2	43 210.021	$3d^64s4p$	v^5P_3	47 966.572	$3d^74p$
z^5F_2	27 559.581*	$3d^64s4p$	z^5H_3	43 325.958	$3d^64s4p$	v^5F_3	48 122.928	$3d^64s4p$
z^5F_1	27 666.346*	$3d^64s4p$	w^5D_4	43 499.496	$3d^64s4p$	v^5P_2	48 163.438	$3d^74p$
z^5P_3	29 056.321*	$3d^64s4p$	w^5D_3	43 922.665	$3d^64s4p$	w^3G_5	48 231.271	
z^5P_2	29 469.020*	$3d^64s4p$	w^5F_4	44 022.535	$3d^64s4p$	v^5F_2	48 238.843	$3d^64s4p$
z^5P_1	29 732.733*	$3d^64s4p$	w^5F_3	44 166.203	$3d^64s4p$	v^5P_1	48 289.865	$3d^74p$
z^3F_4	31 307.243*	$3d^64s4p$	w^5D_2	44 183.620	$3d^64s4p$	x^3P_2	48 304.638	$3d^64s4p$
z^3D_3	31 322.611*	$3d^64s4p$	w^5F_5	44 243.673*	$3d^64s4p$	v^5F_1	48 350.601	$3d^64s4p$
z^3D_2	31 686.346*	$3d^64s4p$	w^5F_2	44 285.443	$3d^64s4p$	w^3G_4	48 361.878	
z^3D_1	31 805.067*	$3d^64s4p$	w^5D_1	44 411.151	$3d^64s4p$	z^1H_5	48 382.597	$3d^74p$
z^3F_2	32 133.986*	$3d^64s4p$	v^5D_4	44 415.070	$3d^64s4p$	x^3P_0	48 460.099	$3d^64s4p$
y^5D_4	33 095.937*	$3d^74p$	w^5D_0	44 458.933	$3d^64s4p$	w^3G_3	48 475.668	
y^5D_3	33 507.120*	$3d^74p$	y^5S_2	44 511.806	$3d^74p$	x^3P_1	48 516.135	$3d^64s4p$
y^5F_5	33 695.394*	$3d^74p$	v^5D_3	44 551.331	$3d^64s4p$	y^1G_4	48 702.526	$3d^74p$
y^5D_2	33 801.567*	$3d^74p$	v^5D_2	44 664.068	$3d^64s4p$	w^3F_4	49 108.891	$3d^64s4p$
z^3P_2	33 946.929*	$3d^64s4p$	v^5D_1	44 760.739	$3d^64s4p$	v^3D_3	49 135.022	$3d^64s4p$
y^5D_1	34 017.098	$3d^74p$	v^5D_0	44 826.894	$3d^64s4p$	v^3D_2	49 242.593	$3d^64s4p$
y^5F_4	34 039.513*	$3d^74p$	x^3D_3	45 220.676	$3d^64s4p$	v^3F_3	49 242.880	$3d^64s4p$
y^5D_0	(34 121.596)	$3d^74p$	x^3D_2	45 281.832	$3d^64s4p$	v^3D_1	49 297.620	$3d^64s4p$
y^5F_3	34 328.749*	$3d^74p$	y^3G_5	45 294.846	$3d^64s4p$	w^3F_2	49 433.121	$3d^64s4p$
z^3P_1	34 362.871	$3d^64s4p$	y^3G_4	45 428.396	$3d^64s4p$	y^3H_6	49 434.156	$3d^74p$
y^5F_2	34 547.206*	$3d^74p$	x^3D_1	45 551.763	$3d^64s4p$	v^3G_5	49 460.890	$3d^74p$
z^3P_0	(34 555.597)	$3d^64s4p$	y^3D_3	45 562.971	$3d^64s4p$	z^1D_2	(49 477.126)	$3d^74p$
y^5F_1	34 692.144*	$3d^74p$	x^5G_6	(45 608.356)	$3d^64s4p$	y^3H_5	49 604.415	$3d^74p$
z^5G_5	34 782.416*	$3d^74p$	x^5G_5	45 726.117*	$3d^64s4p$	v^3G_4	49 627.877	$3d^74p$
z^5G_4	35 257.319*	$3d^74p$	x^5G_3	45 913.488	$3d^64s4p$	v^3H_4	49 726.977	$3d^74p$
z^3G_5	35 379.207*	$3d^74p$	x^5G_2	45 964.958	$3d^64s4p$	v^3G_3	49 850.582	$3d^74p$
z^5G_3	35 611.619*	$3d^74p$	z^3I_6	46 026.969	$3d^64s4p$	w^3P_0	49 951.341	$3d^74p$
z^3G_4	35 767.561*	$3d^74p$	w^3P_3	46 137.111	$3d^54s^24p$	w^3P_1	50 043.205	$3d^74p$
z^5G_2	35 856.400*	$3d^74p$	w^5P_2	46 313.535	$3d^54s^24p$	w^3P_2	50 186.831	$3d^74p$
z^3G_3	36 079.367*	$3d^74p$	w^3D_3	46 410.377	$3d^54s4p$	z^1F_3	50 586.874	$3d^74p$
y^3F_4	36 686.164*	$3d^74p$	z^3S_1	46 600.814	$3d^64s^24p$	x^1G_4	50 613.972	
y^5P_3	36 766.962	$3d^64s4p$	y^3P_0	46 672.527	$3d^74p$	u^5F_5	51 016.658	$3d^64s5p$
y^5P_2	37 152.557	$3d^64s4p$	u^5D_4	46 720.836	$3d^74p$	x^3H_6	51 023.151	$3d^64s4p$
y^3F_3	37 162.740*	$3d^74p$	y^3P_2	46 727.068	$3d^74p$	x^3H_5	51 068.710	$3d^64s4p$
y^5P_1	37 409.542*	$3d^64s4p$	u^5D_3	46 744.988	$3d^74p$	t^5D_4	51 076.626	$3d^64s5p$
y^3F_2	37 521.157*	$3d^74p$	u^5D_2	46 888.510	$3d^74p$	v^3F_2	51 201.284	$3d^64s4p$
y^3D_3	38 175.350*	$3d^74p$	x^3F_4	46 889.143	$3d^74p$	v^3F_4	51 304.603	$3d^64s4p$
y^3D_2	38 678.032*	$3d^74p$	y^3P_1	46 901.820	$3d^74p$	t^5D_3	51 361.394	$3d^64s5p$
			z^3H_6	(46 982.317)	$3d^64s4p$	v^3F_3	51 365.308	$3d^64s4p$

TABLE II. Odd energy levels of Fe I.—Continued

Designation	Level (cm ⁻¹)	Configuration	Designation	Level (cm ⁻¹)	Configuration	Designation	Level (cm ⁻¹)	Configuration
<i>u</i> ³ G ₅	51 373.909	3 <i>d</i> ⁷ 4 <i>p</i>	<i>y</i> ³ I ₆	52 513.549	3 <i>d</i> ⁷ 4 <i>p</i>	<i>v</i> ³ H ₅	55 429.815	
<i>u</i> ³ F ₄	51 381.455	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	<i>w</i> ³ H ₅	52 613.084	3 <i>d</i> ⁷ 4 <i>p</i>	<i>v</i> ³ H ₄	55 446.000	
4	51 409.117		<i>y</i> ³ I ₇	(52 654.986)	3 <i>d</i> ⁷ 4 <i>p</i>	<i>v</i> ³ H ₆	(55 489.748)	
<i>u</i> ³ F ₃	51 619.069	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	<i>t</i> ³ D ₂	52 682.916	3 <i>d</i> ⁷ 4 <i>p</i>	<i>w</i> ¹ D ₂	55 754.239	3 <i>d</i> ⁷ 4 <i>p</i>
6	51 630.172	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	<i>w</i> ³ H ₄	52 768.721	3 <i>d</i> ⁷ 4 <i>p</i>	<i>w</i> ¹ F ₃	55 790.673	
<i>u</i> ³ G ₄	51 668.189	3 <i>d</i> ⁷ 4 <i>p</i>	8	52 857.790	3 <i>d</i> ⁷ 4 <i>p</i>	<i>s</i> ³ G ₄	55 905.538	
<i>u</i> ³ P ₃	51 691.935	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	<i>y</i> ³ I ₅	52 898.971	3 <i>d</i> ⁷ 4 <i>p</i>	<i>s</i> ³ G ₅	55 907.171	
<i>y</i> ¹ D ₂	51 708.309	3 <i>d</i> ⁷ 4 <i>p</i>	<i>v</i> ³ P ₂	52 916.292	3 <i>d</i> ⁷ 4 <i>p</i>	<i>s</i> ³ G ₃	56 097.829	
<i>x</i> ¹ D ₂	51 762.067		<i>z</i> ¹ I ₆	53 093.521	3 <i>d</i> ⁷ 4 <i>p</i>	<i>u</i> ³ H ₆	56 333.958	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>
<i>u</i> ³ G ₃	51 825.773	3 <i>d</i> ⁷ 4 <i>p</i>	<i>z</i> ¹ P ₁	53 229.942	3 <i>d</i> ⁷ 4 <i>p</i>	<i>u</i> ³ H ₅	56 382.662	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>
<i>u</i> ³ F ₂	51 827.401	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	<i>x</i> ¹ F ₃	53 763.271		<i>u</i> ³ H ₄	56 423.279	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>
<i>t</i> ⁵ D ₀	51 941.786	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	<i>v</i> ³ P ₁	53 808.353	3 <i>d</i> ⁷ 4 <i>p</i>	<i>u</i> ³ F ₄	56 592.699	3 <i>d</i> ⁷ 4 <i>p</i>
<i>u</i> ³ P ₂	51 944.774	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	10	53 891.520	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>	<i>u</i> ³ F ₃	56 783.317	3 <i>d</i> ⁷ 4 <i>p</i>
<i>u</i> ³ F ₁	51 945.805	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	<i>t</i> ³ G ₅	53 983.284	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>	<i>u</i> ³ F ₂	56 858.659	3 <i>d</i> ⁷ 4 <i>p</i>
<i>u</i> ³ D ₃	51 969.079	3 <i>d</i> ⁷ 4 <i>p</i>	12	54 013.748	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>	<i>v</i> ¹ G ₄	56 951.286	
<i>u</i> ³ P ₁	52 110.587	3 <i>d</i> ⁶ 4 <i>s</i> 5 <i>p</i>	<i>t</i> ⁵ P ₂	54 112.218	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>	<i>x</i> ³ I ₆	(57 070.186)	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>
<i>t</i> ³ D ₁	52 180.804	3 <i>d</i> ⁷ 4 <i>p</i>	<i>t</i> ³ G ₄	54 237.415	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>	<i>x</i> ³ I ₅	(57 104.222)	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>
<i>t</i> ³ D ₃	52 213.226	3 <i>d</i> ⁷ 4 <i>p</i>	<i>t</i> ⁵ P ₁	54 271.057	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>	<i>t</i> ³ F ₂	57 708.747	
<i>u</i> ³ D ₂	52 296.899	3 <i>d</i> ⁷ 4 <i>p</i>	13	54 301.334		<i>r</i> ³ G ₄	60 172.058	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>d</i>
<i>w</i> ³ H ₆	52 431.418	3 <i>d</i> ⁷ 4 <i>p</i>	<i>t</i> ³ G ₃	54 600.346	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>p</i>	<i>r</i> ³ G ₃	60 364.706	3 <i>d</i> ⁶ 4 <i>s</i> 4 <i>d</i>
<i>u</i> ³ D ₁	52 512.445	3 <i>d</i> ⁷ 4 <i>p</i>	<i>w</i> ¹ G ₄	54 810.841		<i>q</i> ³ G ₃	60 806.653	

Below 2000 Å a few additional lines were measured in a more conventional way by comparison with external standards of longer wavelength (lower order).

In addition to these, earlier measurements taken on a 6.65 meter Paschen concave grating spectrograph are included. These values are generally several times less precise. The effective resolving power is about 250,000, and the line shape dissymmetries limit the accuracy attainable.

Approximately 4000 additional lines have been measured, including previously identified lines of Fe I, Fe II, Ne I and Ne II, as well as many for which no definite ion assignment has yet been made. The Fe I measurements were then used to construct the energy level scheme given in tables I and II. Using these, an expanded set of Ritz standards was computed. These replace the original measurements wherever possible in the line list given in table III.

A comparison of these energy level values for low-pressure sources shows systematic differences compared to those derived from the best averages available for the atmospheric arc [Edlén, 1955]. Edlén [1960] has suggested that for missing low odd levels, estimates for low pressure sources can be made by adding 0.015 cm⁻¹ to the corresponding atmospheric arc value. The entries in table II given between parentheses were derived in this way.

The corresponding correction for low even levels appears to be negligible, and the parenthetical entries of table I are therefore taken directly from Edlén's 1957 atmospheric arc values.

An improved analysis of the Fe II spectrum in terms of Ritz standards also appears to be possible on the basis of these measurements, but this has been deferred pending the completion of more extensive

five-meter measurements which eventually will replace the less precise Paschen ones. This work is now in progress.

Ne I and II lines show pronounced Doppler broadening in these sources. The Ne I measurements have been replaced wherever possible by more precise interferometric values given by Burns et al. [1950], and by Ritz standards derived by Kaufman and Edlén [1974] based on the energy level analysis of Kaufman and Minnhagen [1972].

A similar analysis of the Ne II spectrum has been made by Persson [1971]. The Ne II wavelength values given here are in all cases derived from his computed wave number values.

Some 4000 lines are set out in table III, and include 2377 Fe I, 596 Fe II, 189 Ne I and 92 Ne II (the ion designation is indicated in Column 4) as well as 744 for which no clear specification has been possible. Most of the latter are probably previously undetected lines of Fe I.

Column 1 gives typical intensities for a 90 mA discharge in a tube with an iron hollow cathode, filled with neon at 3.5 torr. The absolute scale is standardized in such a way that above 2900 Å the energy flux from 1 cm² of the light course per unit solid angle is in ergs per second. Below this the tungsten lamp reference source was not reliable because of scattered light problems, and an entirely different method based on absorption line strengths was devised [Crosswhite, 1958]. Recent experiments which extend the tungsten calibration to 2300 Å indicate that these short wavelength values are too high by some 40 percent. Because the relative intensities vary with pressure and are also very sensitive to the presence of small amounts of hydrogen, these values should be con-

sidered as only semiquantitative unless only relative values of lines having the same upper state are considered. For these reasons the intensities given in Column 1 have been put on a stylized scale 3, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30 . . . etc. in multiples of 10. Lines with intensities less than one are given the value "0".

Columns 2 and 3 are air and vacuum wavelengths, respectively. For most of the Johns Hopkins measurements, the vacuum wavelengths are primary, as the interferometer and five-meter spectrograph both were evacuated. The air and vacuum wavelengths are related by Edlén's dispersion formula for standard air [Edlén, 1953 and 1966].

The fifth column (Ref) gives the source of the data, the key being given on the page preceding table III.

The last two columns give the energy level designations of the lower and upper levels of Fe I, respectively. Energy level values for most of these are given in tables I and II. A further discussion of these levels can be found in Reader and Sugar [1974].

A set of photoelectric traces similar to those originally given in the Spectroscopy Laboratory report on Fe I [Crosswhite, 1958] and in various editions of the AIP handbook [Crosswhite, 1972] follow table III. The intensities indicated in these traces are roughly those given in table III, although the latter contains results in addition to those from this specific run. The calibration of sensitivity variation with wavelength above 2900 Å was done with a standard tungsten lamp, but below this use was made of self-absorption measurements and thermodynamic considerations to get a rough extrapolation. Further details of these measurements will be reported at a later time.

Key to References in Table III, Column 5

BA	Burns, Adams and Longwell [1950]
BW	Burns and Walters [1931]
CA	Calculated from differences of energy levels given in tables I and II
CP	Calculated lines of Ne II given in Persson [1971]
ED	Calculated from differences of estimated energy levels [Edlén 1957, 1960]
FE	Interferometric measurements of Fe I [Crosswhite, 1958]
JA	JHU 5-meter Jarrell-Ash measurements
KE	Calculated lines of Ne I given in Kaufman and Edlén [1974]
P	JHU 6.65-meter Paschen measurements
SD	Stanley and Dieke [1955]
SM	Stanley and Meggers [1957]

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References

- Burns, K., Adams, K. B., and Longwell, J., Interference measurements in the spectra of neon and natural mercury, *J. Opt. Soc. Amer.* **40**, 339 (1950).
- Burns, K., and Walters, F. M. Jr., Wavelengths and atomic levels in the spectrum of the vacuum iron arc, *Publ. Alleghany Observ.* **6**, 159 (1929); **8**, 39 (1931).
- Crosswhite, H. M., The Spectrum of Iron I, Johns Hopkins Spectroscopic Report No. 13 (1958).
- Crosswhite, H. M., U. S. Patent No. 3,473,865 (1969).
- Crosswhite, H. M., Section 7g of American Institute of Physics Handbook, D. E. Gray, editor (McGraw-Hill, New York, 1972).
- Crosswhite, H. M., Dieke, G. H., and Legagneur, C. S., Hollow iron cathode discharge as source for wavelength and intensity standards, *J. Opt. Soc. Amer.* **45**, 270 (1955).
- Crosswhite, H. M., and Jones, W. W., unpublished (1974).
- Dieke, G. H., and Heath, D. F., High resolution vacuum spectrograph, *Japan J. Appl. Phys.* **4**, Suppl. 1, 455 (1965).
- Edlén, B., The dispersion of standard air, *J. Opt. Soc. Amer.* **43**, 339 (1953).
- Edlén, B., Report to the IAU Commission 14 (1955).
- Edlén, B., *Trans. Int. Astron. Union* **IX**, 218 (1957).
- Edlén, B., *Trans. Int. Astron. Union* **X**, 214 (1960).
- Edlén, B., The refractive index of air, *Metrologia (Germany)* **2**, 71 (1966).
- Fastie, W. G., U.S. Patent 3,011,391 (1963).
- Kaufman, V., and Edlén, B., *J. Chem. Phys. Ref. Data* **3**, 825 (1974).
- Reader, J., and Sugar, J., *J. Phys. Chem. Ref. Data* **5** (1975).
- Kaufman, V., and Minnhagen, L., Accurate ground-term combinations in Ne I, *J. Opt. Soc. Amer.* **62**, 92 (1972).
- Kielkopf, J. F., unpublished tests using self-reversed natural mercury lines (1973).
- Persson, W., The spectrum of singly ionized neon, Ne II, *Physica Scripta* **3**, 133 (1971).
- Pfund, A. H., Metallic arcs for spectroscopic investigations, *Astro-phys. Jour.* **27**, 298 (1908).
- Reader, J., and Sugar, J., *J. Phys. Chem. Ref. Data* **5** (1975).
- Russel, H. N., and Moore, C. E., The arc spectrum of iron (Fe I), *Trans. Am. Phil. Soc.* **34**, Part 2, 113 (1944).
- Stanley, R. W., and Dieke, G. H., Interferometric wavelengths of iron lines from a hollow cathode discharge, *J. Opt. Soc. Amer.* **45**, 280 (1955).
- Stanley, R. W., and Meggers, W. F., Wavelengths from iron-halide lamps, *J. Research N.B.S.* **58**, 41 (1957) RP 2733.
- Williams, W. E., and Middleton, A., Vacuum wavelength measurements in the iron spectrum by means of the reflection echelon grating, *Proc. Roy. Soc.* **A172**, 159 (1939).

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TABLE III. Spectrum of the Fe-Ne hollow cathode

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
30		1934.5378	Fe I	CA	$a^5D_4 - u^5P_3$	3	2158.474	2159.153	Fe I	JA	
25		1937.2686	Fe I	CA	$a^5D_4 - u^5F_3$	15	2158.5341	2159.2123	Fe I	CA	$a^5D_2 - w^3D_3$
20		1940.6607	Fe I	CA	$a^5D_3 - u^5P_2$	2	2158.6296	2159.3079	Fe I	CA	$a^5D_3 - y^3P_2$
8		1945.2762	Fe I	CA	$a^5D_2 - u^5P_1$	5	2158.7345	2159.4128	Fe I	CA	$a^5D_1 - x^3F_2$
2		1946.2275	Fe I	CA	$a^5D_4 - u^5F_4$	5	2158.9202	2159.5985	Fe I	CA	$a^5D_3 - u^5D_4$
50		1946.9877	Fe I	CA	$a^5D_4 - t^5D_3$	3	2159.4313	2160.1097	Fe I	CA	$a^5D_0 - w^3D_1$
15		1950.2300	Fe I	CA	$a^5D_3 - u^5P_3$	3	2159.638	2160.317		JA	
25		1951.5710	Fe I	CA	$a^5D_2 - u^5P_2$	5	2159.6575	2160.3360	Fe I	CA	$a^5D_1 - u^5D_1$
20		1952.2687	Fe I	CA	$a^5D_1 - u^5P_1$	5	2159.8357	2160.5142	Fe I	CA	$a^5F_2 - t^5P_1$
30		1952.588	Fe I	JA	$a^5D_3 - t^5D_2$	3	2159.881	2160.590		JA	
30		1953.0053	Fe I	CA	$a^5D_3 - u^5F_3$	6	2159.9239	2160.6024	Fe I	CA	$a^5D_1 - u^5D_0$
12		1955.7027	Fe I	CA	$a^5D_0 - u^5P_1$	3	2161.159	2161.838	Fe II	JA	
15		1956.0516	Fe I	CA	$a^5D_2 - u^5F_2$	15	2161.5792	2162.2583	Fe I	CA	$a^5D_1 - w^3D_2$
60		1957.8427	Fe I	CA	$a^5D_4 - t^5D_4$	15	2162.021	2162.701	Fe II	JA	
10		1958.5694	Fe I	CA	$a^5D_1 - u^5F_1$	8	2162.248	2162.927		JA	
20		1958.6089	Fe I	CA	$a^5D_1 - u^5P_2$	30	2162.5486	2165.2283	Fe I	CA	$a^5D_2 - u^5D_2$
60		1960.1441	Fe I	CA	$a^5D_4 - u^5F_5$	30	2165.752	2166.432		JA	
30		1961.246	Fe I	JA	$a^5D_2 - u^5P_3$	15	2166.587	2167.267		JA	
10		1962.0256	Fe I	CA	$a^5D_0 - u^5F_1$	40	2166.7727	2167.4526	Fe I	CA	$a^5D_4 - w^5P_3$
50		1962.1107	Fe I	CA	$a^5D_3 - u^5F_1$	30	2171.2968	2171.9779	Fe I	CA	$a^5D_2 - u^5D_3$
10		1962.8834	Fe I	CA	$a^5D_3 - t^5D_3$	2	2172.1443	2172.8236	Fe I	CA	$a^5D_2 - y^3P_2$
15		1963.1219	Fe I	CA	$a^5D_1 - u^5F_2$	15	2172.5851	2173.2662	Fe I	CA	$a^5D_1 - y^3P_1$
10		1964.0552	Fe I	CA	$a^5D_2 - u^5F_3$	25	2173.2136	2173.8951	Fe I	CA	$a^5D_1 - u^5D_2$
10	2040.690	2041.345		JA		10	2175.454	2176.136		JA	
5	2080.242	2080.905		JA		20	2176.8404	2177.5226	Fe I	CA	$a^5D_0 - y^3P_1$
2	2081.284	2081.947		JA		5	2177.6946	2178.3768	Fe I	CA	$a^5F_2 - 10_3$
100	2084.1217	2084.7852	Fe I	CA	$a^5D_4 - v^5P_3$	300	2178.1182	2178.8007	Fe I	CA	$a^5D_2 - z^3S_1$
50	2085.424	2086.088		JA		15	2180.8686	2181.5514	Fe I	CA	$a^5D_1 - y^3P_2$
20	2085.463	2086.127	Ne II	CP		8	2183.7963	2184.4797	Fe I	CA	$a^5F_2 - x^1F_3$
4	2087.5109	2088.1750	Fe I	CA	$a^5D_3 - x^3P_2$	6	2186.2500	2186.9340	Fe I	CA	$a^5D_4 - x^5G_5$
8	2087.542	2088.206		JA		250	2186.4862	2187.1702	Fe I	CA	$a^5D_3 - w^5P_3$
6	2090.3831	2091.0479	Fe I	CA	$a^5D_3 - v^5F_2$	60	2186.8922	2187.5766	Fe I	CA	$a^5D_1 - z^3S_1$
6	2090.8545	2091.5194	Fe I	CA	$a^5D_2 - x^3P_1$	120	2187.1946	2187.8787	Fe I	CA	$a^5D_2 - w^5P_1$
50	2093.711	2094.377		JA		25	2191.2043	2191.8893	Fe I	CA	$a^5D_0 - z^3S_1$
200	2096.106	2096.772	Ne II	CP		250	2191.8391	2192.5242	Fe I	CA	$a^5D_2 - w^5P_2$
15	2096.253	2096.920	Ne II	CP		150	2196.0429	2196.7281	Fe I	CA	$a^5D_1 - w^5P_1$
2	2098.163	2098.829		JA		80	2200.3900	2201.0769	Fe I	CA	$a^5D_0 - w^5P_1$
3	2098.9386	2099.6050	Fe I	CA	$a^5D_1 - x^3P_1$	80	2200.7243	2201.4113	Fe I	CA	$a^5D_1 - w^5P_2$
10	2100.7976	2101.4646	Fe I	CA	$a^5D_2 - v^5P_1$	5	2201.590	2202.277		JA	
20	2102.3541	2103.0211	Fe I	CA	$a^5D_3 - v^5P_3$	5	2206.083	2206.771		JA	
6	2103.0530	2103.7202	Fe I	CA	$a^5D_2 - v^5F_2$	8	2206.150	2206.838		JA	
2	2106.2600	2106.9278	Fe I	CA	$a^5D_1 - v^5F_1$	4	2207.0684	2207.7567	Fe I	CA	$a^5D_4 - y^3G_5$
10	2106.3946	2107.0626	Fe I	CA	$a^5D_2 - v^5P_2$	15	2208.407	2209.096	Fe II	JA	
10	2108.9591	2109.6274	Fe I	CA	$a^5D_1 - v^5P_1$	8	2209.034	2209.723	Fe II	JA	
8	2110.2354	2110.9040	Fe I	CA	$a^5F_5 - 13_4$	8	2210.6887	2211.3778	Fe I	CA	$a^5D_4 - x^3D_3$
2	2110.732	2111.401		JA		20	2213.655	2214.345	Fe II	JA	
4	2130.964	2131.637		JA		8	2214.039	2214.729	Fe II	JA	
10	2132.0167	2132.6899	Fe I	CA	$a^5D_4 - x^3F_4$	8	2215.077	2215.767	Fe II	JA	
2	2135.948	2136.622		JA		4	2215.702	2216.393	Fe II	JA	
4	2138.5924	2139.2668	Fe I	CA	$a^5D_4 - u^5D_3$	12	2218.262	2218.952	Fe II	JA	
15	2139.6980	2140.3727	Fe I	CA	$a^5D_4 - u^5D_4$	10	2219.896	2220.587	Fe II	JA	
3	2139.738	2140.413		JA		20	2220.381	2221.072	Fe II	JA	
2	2139.9349	2140.6094	Fe I	CA	$a^5D_2 - l_2$	8	2221.167	2221.858	Fe II	JA	
6	2141.7180	2142.3931	Fe I	CA	$a^5D_3 - x^3F_3$	8	2223.487	2224.179	Fe II	JA	
12	2145.1891	2145.8649	Fe I	CA	$a^5D_3 - w^3D_3$	12	2228.1715	2228.8643	Fe I	CA	$a^5D_3 - x^3D_2$
2	2147.045	2147.721		JA		2	2229.0728	2229.7658	Fe I	CA	$a^5D_2 - x^3D_1$
2	2147.702	2148.379		JA		15	2231.2128	2231.9065	Fe I	CA	$a^5D_3 - x^3D_3$
5	2150.1844	2150.8610	Fe I	CA	$a^5D_2 - x^3F_2$	60	2244.244	2244.940		JA	
5	2150.621	2151.298	Fe II	JA		25	2245.578	2246.275		JA	
10	2151.695	2152.372		JA		10	2245.6527	2246.3494	Fe I	CA	$a^5D_2 - x^3D_3$
2	2152.480	2153.157		JA		20	2248.8602	2249.5574	Fe I	CA	$a^5F_5 - u^5F_4$
15	2153.0065	2153.6839	Fe I	CA	$a^5D_2 - w^3D_2$	50	2250.437	2251.134		JA	
4	2155.0197	2155.6972	Fe I	CA	$a^5D_2 - x^3F_3$	50	2250.7904	2251.4880	Fe I	CA	$a^5D_4 - v^5D_4$
50	2157.7943	2158.4727	Fe I	CA	$a^5D_3 - u^5D_3$	60	2251.8739	2252.5717	Fe I	CA	$a^5D_1 - x^3D_2$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
25	2255.766	2256.465	Fe II	JA		6	2306.667	2307.377		JA	
20	2255.8647	2256.5634	Fe I	CA	$a^5F_4 - u^5P_3$	5	2306.856	2307.566		JA	
300	2259.5106	2260.2101	Fe I	CA	$a^5D_4 - w^5F_5$	6	2307.077	2307.787		JA	
60	2264.3893	2265.0898	Fe I	CA	$a^5F_5 - t^5D_4$	6	2307.314	2308.024	Fe II	JA	
40	2265.0543	2265.7550	Fe I	CA	$a^5D_3 - v^5D_3$	6	2308.377	2309.087		JA	
15	2266.9063	2267.6074	Fe I	CA	$a^5F_3 - u^5F_2$	5	2308.767	2309.477	Fe II	JA	
80	2267.0847	2267.7859	Fe I	CA	$a^5D_3 - y^5S_2$	120	2308.9990	2309.7093	Fe I	CA	$a^5D_1 - w^5D_2$
80	2267.4695	2268.1707	Fe I	CA	$a^5F_5 - u^5F_5$	8	2309.442	2310.153		JA	
15	2269.1000	2269.8016	Fe I	CA	$a^5D_2 - v^5D_1$	4	2310.090	2310.801	Fe II	JA	
50	2270.8619	2271.5638	Fe I	CA	$a^5D_4 - w^5F_4$	6	2310.166	2310.877		JA	
30	2271.7827	2272.4848	Fe I	CA	$a^5F_4 - u^5F_4$	6	2310.260	2310.971		JA	
150	2272.0696	2272.7718	Fe I	CA	$a^5D_3 - v^5D_4$	4	2311.224	2311.935	Fe II	JA	
30	2272.8188	2273.5212	Fe I	CA	$a^5F_4 - t^5D_3$	5	2311.291	2312.002	Fe II	JA	
30	2274.0893	2274.7919	Fe I	CA	$a^5D_2 - v^5D_2$	6	2312.024	2312.736	Fe II	JA	
12	2275.1917	2275.8946	Fe I	CA	$a^5D_1 - v^5D_0$	5	2312.315	2313.026		JA	
10	2275.5972	2276.3002	Fe I	CA	$a^3F_4 - s^3G_5$	6	2312.611	2313.322		JA	
150	2276.0258	2276.7289	Fe I	CA	$a^5D_4 - w^5D_3$	150	2313.1041	2313.8153	Fe I	CA	$a^5D_2 - w^5D_3$
15	2277.1054	2277.8087	Fe I	CA	$a^5F_3 - t^5D_2$	10	2313.190	2313.901		JA	
20	2277.6673	2278.3707	Fe I	CA	$a^5F_3 - u^5F_3$	5	2313.262	2313.973		JA	
80	2279.9368	2280.6407	Fe I	CA	$a^5D_2 - v^5D_3$	6	2313.564	2314.276		JA	
12	2280.2158	2280.9198	Fe I	CA	$a^5F_2 - u^5F_2$	6	2313.941	2314.652		JA	
5	2282.8647	2283.5693	Fe I	CA	$a^5F_1 - u^5F_1$	10	2314.701	2315.413		JA	
8	2283.0743	2283.7789	Fe I	CA	$a^5F_1 - t^5D_0$	8	2315.729	2316.441		JA	
20	2283.3053	2284.0099	Fe I	CA	$a^5D_0 - v^5D_1$	6	2316.512	2317.224		JA	
30	2283.6551	2284.3599	Fe I	CA	$a^5D_1 - v^5D_2$	10	2316.911	2317.623		JA	
150	2284.0857	2284.7905	Fe I	CA	$a^5D_3 - w^5D_2$	20	2317.352	2318.064		JA	
150	2287.2498	2287.9553	Fe I	CA	$a^5D_2 - w^5D_1$	8	2317.380	2318.092	Fe II	JA	
40	2287.6309	2288.3365	Fe I	CA	$a^5F_4 - t^5D_4$	8	2317.596	2318.308		JA	
20	2289.0366	2289.7425	Fe I	CA	$a^5F_1 - u^5F_2$	8	2317.8983	2318.6105	Fe I	CA	$a^3F_2 - s^3G_3$
10	2290.0663	2290.7724	Fe I	CA	$a^5F_3 - u^5F_4$	8	2318.151	2318.863		JA	
25	2290.5533	2291.2595	Fe I	CA	$a^5F_2 - t^5D_2$	6	2318.187	2318.899		JA	
10	2290.7748	2291.4811	Fe I	CA	$a^5F_4 - u^5F_5$	6	2318.318	2319.030		JA	
40	2291.1193	2291.8256	Fe I	CA	$a^5F_2 - u^5F_3$	15	2320.035	2320.748		JA	
8	2291.6267	2292.3331	Fe I	CA	$a^5D_1 - y^5S_2$	200	2320.3579	2321.0707	Fe I	CA	$a^5D_3 - w^5D_4$
20	2291.999	2292.706		JA		10	2320.405	2321.118		JA	
300	2292.5240	2293.2306	Fe I	CA	$a^5D_3 - w^5F_4$	6	2321.243	2321.956		JA	
30	2292.828	2293.535		JA		8	2321.50	2322.21		JA	
25	2293.8478	2294.5548	Fe I	CA	$a^5D_2 - w^5F_2$	10	2321.690	2322.403	Fe II	JA	
80	2294.4078	2295.1149	Fe I	JA	$a^5D_1 - w^5D_0$	15	2321.755	2322.468		JA	
15	2296.890	2297.598		JA		6	2322.331	2323.044	Fe II	JA	
25	2296.9269	2297.6345	Fe I	CA	$a^5D_1 - w^5D_1$	10	2322.941	2323.654		JA	
8	2297.463	2298.171		JA		8	2323.014	2323.727		JA	
200	2297.7870	2298.4948	Fe I	CA	$a^5D_3 - w^5D_3$	8	2323.187	2323.900		JA	
600	2298.1693	2298.8772	Fe I	CA	$a^5D_4 - w^5D_4$	6	2323.372	2324.085		JA	
10	2298.221	2298.929	Fe II	JA		6	2323.422	2324.135		JA	
15	2298.446	2299.154		JA		6	2324.128	2324.841		JA	
20	2298.6602	2299.3682	Fe I	CA	$a^5D_1 - w^5F_1$	8	2324.202	2324.915		JA	
80	2299.2201	2299.9283	Fe I	CA	$a^5D_2 - w^5D_2$	6	2324.414	2325.127		JA	
4	2299.751	2300.459		JA		12	2324.473	2325.187		JA	
300	2300.1416	2300.8499	Fe I	CA	$a^5D_2 - w^5F_3$	8	2324.580	2325.293		JA	
4	2300.524	2301.232		JA		8	2324.816	2325.529		JA	
100	2301.175	2301.884		JA		10	2325.035	2325.748		JA	
4	2301.567	2302.276		JA		10	2325.296	2326.009		JA	
4	2301.601	2302.310		JA		8	2325.587	2326.300		JA	
50	2301.6839	2302.3925	Fe I	CA	$a^5D_0 - w^5D_1$	6	2325.638	2326.351		JA	
4	2301.965	2302.674		JA		10	2325.715	2326.429		JA	
8	2303.353	2304.062	Fe II	JA		6	2325.764	2326.477		JA	
100	2303.4244	2304.1334	Fe I	CA	$a^5D_0 - w^5F_1$	6	2326.157	2326.870		JA	
150	2303.5810	2304.2900	Fe I	CA	$a^5D_1 - w^5F_2$	6	2326.221	2326.935		JA	
4	2304.207	2304.916		JA		6	2326.362	2327.075		JA	
12	2304.7336	2305.4429	Fe I	CA	$a^5F_2 - t^5D_3$	6	2326.770	2327.484		JA	
4	2304.906	2305.615	Fe II	JA		6	2326.810	2327.524		JA	
6	2306.1716	2306.8812	Fe I	CA	$a^5F_3 - t^5D_4$	100	2327.3962	2328.1105	Fe II	JA	
15	2306.3823	2307.0920	Fe I	CA	$a^3F_3 - s^3G_4$	15	2327.875	2328.590	Fe II	JA	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
8	2327.962	2328.675	Fe I	JA	$a^5D_4 - y^5G_5$	6	2358.767	2359.488	Fe II	JA	
10	2328.749	2329.463		JA		20	2358.884	2359.605		JA	
5	2329.6406	2330.3554		CA		50	2358.951	2359.673		JA	
15	2329.992	2330.707		JA		200	2359.118	2359.840		JA	
5	2331.057	2331.772		JA		15	2359.595	2360.317		JA	
6	2331.112	2331.827	Fe II	JA		150	2359.997	2360.719	Fe II	JA	
8	2331.172	2331.888		JA		120	2360.293	2361.014		JA	
100	2331.3082	2332.0234		JA		30	2360.411	2361.133		JA	
15	2331.975	2332.691		JA		30	2360.511	2361.233		JA	
5	2332.241	2332.957		JA		12	2361.009	2361.731		JA	
300	2332.7994	2333.5149	Fe II	JA		40	2362.020	2362.742	Fe II	JA	
15	2333.232	2333.948		JA		60	2363.860	2364.582		JA	
10	2333.708	2334.424		JA		12	2364.710	2365.433		JA	
8	2334.321	2335.037		JA		200	2364.826	2365.549		JA	
12	2334.726	2335.442		JA		10	2364.908	2365.631		JA	
6	2334.896	2335.612	Fe II	JA		10	2365.294	2366.017	Fe II	JA	
6	2335.024	2335.741		JA		80	2365.764	2366.487		JA	
8	2335.702	2336.418		JA		25	2366.591	2367.315		JA	
6	2336.824	2337.540		JA		80	2368.595	2369.319		JA	
4	2337.762	2338.479		JA		10	2368.929	2369.653		JA	
200	2338.0070	2338.7237	Fe II	JA		80	2369.455	2370.179	Fe II	JA	
6	2338.147	2338.864		JA		80	2369.4558	2370.1795		CA	
8	2339.408	2340.125		JA		60	2369.7272	2370.4510		JA	
4	2339.508	2340.226		JA		20	2369.777	2370.501		JA	
40	2339.645	2340.362		JA		10	2369.915	2370.639		JA	
10	2339.882	2340.600	Fe II	JA		80	2369.9536	2370.6774	Fe II	JA	
10	2340.462	2341.180		JA		25	2370.4993	2371.2232		JA	
12	2341.174	2341.892		JA		12	2370.774	2371.498		JA	
25	2341.452	2342.170		JA		4	2370.909	2371.634		JA	
15	2341.648	2342.366		JA		120	2371.4305	2372.1547	Fe II	CA	$a^5D_2 - x^5P_2$
5	2342.309	2343.026	Fe II	JA		10	2372.633	2373.357		JA	
10	2342.888	2343.606		JA		300	2373.6245	2374.3492		CA	
25	2343.307	2344.025		JA		150	2373.7351	2374.4598		JA	
600	2343.4941	2344.2121		JA		8	2373.806	2374.531		JA	
80	2343.9600	2344.6780	Fe II	JA		6	2374.085	2374.810	Fe II	JA	
25	2344.154	2344.872		JA		8	2374.247	2374.972		JA	
150	2344.2809	2344.9990		JA		10	2374.389	2375.114		JA	
30	2344.602	2345.320		JA		120	2374.5182	2375.2430		CA	
25	2344.984	2345.702		JA		20	2374.995	2375.720		JA	
50	2345.339	2346.057	Fe II	JA		60	2375.1935	2375.9185	Fe II	JA	
15	2345.568	2346.287		JA		120	2376.4297	2377.1550		JA	
25	2346.354	2347.072		JA		6	2377.891	2378.617		JA	
30	2346.615	2347.334		JA		20	2378.125	2378.851		JA	
12	2346.681	2347.400		JA		10	2378.820	2379.546		JA	
10	2347.778	2348.497	Fe II	JA		80	2379.273	2379.999	Fe II	JA	
200	2348.113	2348.832		JA		20	2379.407	2380.133		JA	
250	2348.299	2349.019		JA		40	2380.205	2380.931		JA	
30	2349.268	2349.988		JA		120	2380.7615	2381.4877		JA	
12	2350.178	2350.897		JA		15	2380.875	2381.601		JA	
15	2350.247	2350.967	Fe I	CA	$a^5D_4 - x^5P_3$	150	2381.8346	2382.5611	Fe II	CA	$a^5D_1 - x^5P_2$
8	2350.4107	2351.1302		JA		1000	2382.0355	2382.7620		JA	
8	2350.523	2351.243		JA		20	2382.897	2383.624		JA	
50	2351.201	2351.920		JA		20	2383.060	2383.787		JA	
6	2351.607	2352.327		JA		60	2383.2452	2383.9720		JA	
15	2351.666	2352.386	Fe II	JA		50	2384.3883	2385.1154	Fe II	JA	
25	2352.309	2353.029		JA		100	2384.4225	2385.1496		JA	
30	2353.469	2354.190		JA		20	2384.548	2385.275		JA	
40	2353.607	2354.328		JA		10	2385.005	2385.732		JA	
15	2353.678	2354.399		JA		5	2387.216	2387.944		JA	
50	2354.477	2355.198	Fe II	JA		8	2387.508	2388.236	Fe II	JA	
40	2354.889	2355.610		JA		12	2388.235	2388.963		JA	
12	2355.216	2355.936		JA		40	2388.3725	2389.1004		JA	
40	2355.3340	2356.0545		CA		300	2388.6283	2389.3563		JA	
10	2357.048	2357.769		JA		200	2389.9728	2390.7012		CA	
					$a^5D_3 - x^5P_2$						$a^5D_2 - x^5P_3$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
30	2390.0975	2390.8259	Fe II	JA		20	2429.386	2430.124	Fe II	JA	
20	2390.766	2391.494	Fe II	JA		10	2429.8150	2430.5524	Fe I	CA	$a^5F_1 - v^3D_1$
15	2391.478	2392.207	Fe II	JA		30	2429.860	2430.598	Fe II	JA	
10	2392.089	2392.818	Fe II	JA		120	2430.078	2430.815	Fe II	JA	
25	2392.1499	2392.8787		JA		6	2430.433	2431.170		JA	
20	2392.578	2393.308	Fe II	JA		5	2430.838	2431.576		JA	
8	2394.832	2395.562		JA		6	2430.881	2431.619		JA	
40	2395.4196	2396.1492	Fe II	JA		25	2431.025	2431.763	Fe II	JA	
1000	2395.624	2396.354	Fe II	JA		8	2432.030	2432.768		JA	
20	2396.1014	2396.8311		JA		80	2432.2616	2432.9995	Fe II	JA	
15	2396.719	2397.449	Fe II	JA		60	2432.873	2433.611	Fe II	JA	
300	2399.2413	2399.9717	Fe II	JA		6	2433.500	2434.238		JA	
20	2400.049	2400.780	Fe II	JA		25	2434.059	2434.797	Fe II	JA	
15	2401.2917	2402.0226	Fe II	JA		20	2434.237	2434.975	Fe II	JA	
50	2404.4307	2405.1623	Fe II	JA		20	2434.648	2435.387	Fe II	JA	
15	2404.515	2405.247		JA		50	2434.729	2435.468	Fe II	JA	
800	2404.885	2405.617	Fe II	JA		50	2434.951	2435.690	Fe II	JA	
10	2405.6826	2406.4145	Fe II	JA		25	2435.002	2435.741		JA	
250	2406.660	2407.393	Fe II	JA		15	2435.870	2436.609		JA	
80	2406.9750	2407.7072	Fe II	JA		4	2436.219	2436.958		JA	
8	2407.188	2407.920		JA		20	2436.346	2437.085		JA	
4	2407.527	2408.259		JA		25	2436.622	2437.361	Fe II	JA	
4	2408.0456	2408.7780	Fe I	CA	$a^5F_3 - w^3F_3$	10	2436.995	2437.735	Fe II	JA	
4	2408.0623	2408.7947	Fe I	CA	$a^5F_3 - v^3D_2$	15	2437.203	2437.942		JA	
300	2410.518	2411.251	Fe II	JA		5	2437.650	2438.390		JA	
200	2411.0678	2411.8009	Fe II	JA		60	2438.1819	2438.9212	Fe I	CA	$a^5F_5 - v^5F_4$
50	2411.8082	2412.5415	Fe II	JA		10	2439.170	2439.910		JA	
150	2413.3102	2414.0438	Fe II	JA		150	2439.3015	2440.0411	Fe II	JA	
5	2416.080	2416.814		JA		15	2439.630	2440.370	Fe I	JA	$a^3F_4 - s^3D_3$
20	2416.4456	2417.1799	Fe II	JA		150	2439.744	2440.484	Fe I	JA	$a^3H_6 - t^3H_6$
10	2416.791	2417.525		JA		80	2440.109	2440.849	Fe I	JA	$a^3H_4 - t^3H_4$
5	2417.490	2418.225	Fe I	BW	$a^3F_4 - 9_4$	40	2440.423	2441.163	Fe II	JA	
10	2417.821	2418.556		JA		12	2440.585	2441.325		JA	
80	2417.8707	2418.6054	Fe II	JA		15	2440.748	2441.487		P	
5	2418.029	2418.763		JA		10	2441.128	2441.868	Fe II	JA	
15	2418.4369	2419.1717	Fe II	JA		20	2442.130	2442.871		JA	
4	2419.004	2419.739		JA		30	2442.374	2443.115	Fe II	JA	
5	2419.0629	2419.7978	Fe I	CA	$a^5F_4 - y^1G_4$	100	2442.567	2443.307	Fe I	JA	$a^3H_5 - t^3H_5$
5	2419.8784	2420.6135	Fe I	CA	$a^5F_2 - v^3D_1$	60	2443.709	2444.450	Fe II	P	
8	2419.989	2420.724		JA		250	2443.8721	2444.6127	Fe I	CA	$a^5F_5 - x^3G_5$
5	2420.178	2420.913		JA		100	2444.515	2445.256	Fe II	JA	
60	2420.3961	2421.1313	Fe I	CA	$a^5F_5 - w^3G_5$	50	2445.106	2445.847	Fe II	JA	
60	2422.688	2423.424	Fe II	JA		50	2445.2125	2445.9534	Fe I	CA	$a^5F_5 - x^3G_4$
8	2422.785	2423.521		JA		100	2445.573	2446.314	Fe II	JA	
60	2423.0893	2423.8251	Fe I	CA	$a^5F_2 - w^3F_3$	40	2445.797	2446.538	Fe II	P	
8	2423.1062	2423.8420	Fe I	CA	$a^5F_2 - v^3D_2$	50	2446.111	2446.852	Fe II	P	
40	2423.210	2423.946	Fe II	JA		10	2446.321	2447.062		P	
10	2423.499	2424.235	Fe II	JA		15	2446.407	2447.148		P	
150	2424.144	2424.880	Fe II	JA		30	2446.471	2447.212	Fe II	P	
15	2424.390	2425.126	Fe II	JA		40	2447.204	2447.945	Fe II	P	
30	2424.592	2425.329	Fe II	JA		25	2447.327	2448.068	Fe II	P	
5	2425.363	2426.100		JA		60	2447.7093	2448.4508	Fe I	CA	$a^5D_4 - x^5F_3$
20	2425.638	2426.374		JA		30	2447.755	2448.497	Fe II	P	
10	2425.685	2426.422	Fe II	JA		8	2449.590	2450.332		P	
12	2426.077	2426.814		JA		25	2449.965	2450.707	Fe II	P	
12	2427.199	2427.936	Fe II	JA		12	2450.032	2450.774	Fe II	P	
12	2427.281	2428.018	Fe II	JA		25	2450.205	2450.947	Fe II	P	
30	2428.292	2429.029	Fe II	JA		12	2450.444	2451.186	Fe I	P	$a^3F_3 - a^3X_3$
120	2428.364	2429.101	Fe II	JA		20	2451.675	2452.418	Fe I	P	
8	2428.455	2429.192		JA		12	2452.139	2452.882		P	
5	2428.641	2429.378		JA		6	2452.590	2453.333	Fe I	BW	$a^3H_4 - t^3H_5$
25	2428.800	2429.538	Fe II	JA		12	2453.153	2453.896	Fe II	P	
25	2429.035	2429.773	Fe II	JA		100	2453.4756	2454.2185	Fe I	CA	$a^5F_4 - v^5F_3$
10	2429.152	2429.889	Fe II	JA		10	2453.797	2454.540	Fe II	P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
20	2453.976	2454.719	Fe II	P		600	2474.8139	2475.5617	Fe I	CA	$a^5F_3 - v^5F_3$
30	2454.578	2455.321	Fe II	P		10	2475.019	2475.767	Fe I	P	
20	2455.567	2456.311		P		50	2475.117	2475.865	Fe II	P	
15	2455.692	2456.435		P		40	2475.541	2476.289	Fe II	P	
15	2455.708	2456.452	Fe II	P		0	2476.031	2476.779		P	
15	2455.898	2456.641	Fe II	P		15	2476.262	2477.010	Fe II	P	
40	2456.189	2456.932		P		40	2476.471	2477.219	Fe I	P	
15	2457.095	2457.839	Fe II	P		60	2476.6566	2477.4047	Fe I	CA	$a^5F_2 - v^5F_1$
10	2457.340	2458.083		P		15	2476.8650	2477.6132	Fe I	CA	$a^5F_1 - x^3P_1$
1500	2457.5978	2458.3416	Fe I	CA	$a^5F_5 - v^5F_5$	25	2477.342	2478.091	Fe II	P	
25	2458.5678	2459.3118	Fe I	CA	$a^5F_5 - w^5G_4$	10	2477.498	2478.247	Fe II	P	
150	2458.784	2459.528	Fe II	P		20	2477.907	2478.655		P	
40	2458.973	2459.717	Fe II	P		10	2478.057	2478.806		P	
6	2460.154	2460.898	Fe II	P		10	2478.112	2478.861	Fe II	P	
10	2460.299	2461.043	Fe I	P		60	2478.571	2479.320	Fe II	JA	
60	2460.440	2461.185	Fe II	P		10	2479.259	2480.008	Fe II	P	
25	2461.059	2461.803		P		120	2479.4801	2480.2289	Fe I	CA	$a^5F_2 - x^3P_2$
80	2461.283	2462.028	Fe II	P		25	2479.630	2480.379		P	
10	2461.668	2462.413	Fe II	P		1200	2479.7761	2480.5250	Fe I	CA	$a^5D_2 - x^5F_2$
100	2461.860	2462.605	Fe II	JA		100	2480.157	2480.906	Fe II	P	
10	2462.134	2462.879		P		25	2480.187	2480.936		P	
100	2462.1808	2462.9257	Fe I	CA	$a^5D_3 - x^5F_2$	10	2480.951	2481.700		P	
1500	2462.6472	2463.3921	Fe I	CA	$a^5D_4 - x^5F_4$	15	2481.048	2481.797	Fe II	P	
40	2462.967	2463.712	Fe I	P		80	2482.117	2482.866	Fe II	P	
15	2463.159	2463.904		P		25	2482.325	2483.075	Fe II	P	
50	2463.292	2464.037	Fe II	P		100	2482.657	2483.406	Fe II	P	
50	2463.7304	2464.4756	Fe I	CA	$a^5F_3 - x^3P_2$	20	2482.752	2483.502		P	
40	2464.009	2464.754	Fe II	P		15	2482.866	2483.615	Fe II	P	
40	2464.904	2465.650	Fe II	P		15	2483.021	2483.771		P	
800	2465.1487	2465.8942	Fe I	CA	$a^5F_4 - v^5F_4$	10000	2483.2713	2484.0210	Fe I	CA	$a^5D_4 - x^5F_5$
10	2465.199	2465.945	Fe II	P		15	2483.369	2484.119		P	
15	2465.666	2466.411		P		300	2483.5332	2484.2829	Fe I	CA	$a^5F_2 - v^5F_2$
15	2465.876	2466.621		P		10	2483.663	2484.413		P	
50	2465.912	2466.658	Fe II	P		15	2483.721	2484.471	Fe II	P	
15	2466.496	2467.242	Fe II	P		20	2483.786	2484.536		P	
60	2466.671	2467.417	Fe II	P		1000	2484.1853	2484.9352	Fe I	CA	$a^5D_1 - x^5F_1$
30	2466.695	2467.441		P		60	2484.241	2484.991	Fe II	JA	
20	2466.766	2467.512		P		30	2484.441	2485.191	Fe II	P	
60	2466.819	2467.564	Fe II	P		20	2484.707	2485.457		P	
30	2467.567	2468.313	Fe I	P		15	2485.139	2485.889		P	
60	2467.7321	2468.4782	Fe I	CA	$a^5F_3 - v^5F_2$	10	2485.264	2486.014		P	
25	2467.99	2468.74	Bl	P		50	2485.9899	2486.7402	Fe I	CA	$a^5F_4 - w^5G_4$
15	2468.295	2469.042	Fe II	P		800	2486.3733	2487.1237	Fe I	CA	$a^5D_4 - y^7P_3$
600	2468.8795	2469.6258	Fe I	CA	$a^5F_5 - w^5G_5$	100	2486.6914	2487.4419	Fe I	CA	$a^5F_3 - v^5F_4$
60	2469.514	2470.260	Fe II	P		100	2487.0659	2487.8165	Fe I	CA	$a^5F_1 - v^5F_1$
25	2470.408	2471.154	Fe II	P		120	2487.3696	2488.1203	Fe I	CA	$a^5D_2 - z^5S_2$
80	2470.670	2471.417	Fe II	JA		4000	2488.1426	2488.8934	Fe I	CA	$a^5D_3 - x^5F_4$
10	2470.764	2471.511	Fe II	P		100	2488.9450	2489.6961	Fe I	CA	$b^3F_4 - q^3G_3$
20	2470.879	2471.625		P		20	2489.009	2489.761		P	
80	2470.9655	2471.7123	Fe I	CA	$a^5F_4 - x^3G_5$	10	2489.074	2489.825	Fe II	P	
6	2472.072	2472.819	Fe II	P		80	2489.482	2490.234	Fe II	P	
800	2472.3359	2473.0830	Fe I	CA	$a^5F_4 - x^3G_4$	20	2489.517	2490.268		P	
800	2472.3515	2473.0987	Fe I	CA	$a^5F_5 - w^5G_6$	1000	2489.7503	2490.5015	Fe I	CA	$a^5D_0 - x^5F_1$
40	2472.428	2473.175	Fe II	P		50	2489.829	2490.580	Fe II	P	
40	2472.605	2473.352	Fe II	P		50	2489.9132	2490.6644	Fe I	CA	$a^5F_1 - x^3P_2$
20	2472.643	2473.390		P		15	2490.124	2490.875		P	
1000	2472.8948	2473.6421	Fe I	CA	$a^5D_3 - x^5F_3$	3000	2490.6441	2491.3955	Fe I	CA	$a^5D_2 - x^5F_3$
2000	2473.156	2473.904	Fe I	JA	$a^5D_4 - y^7P_4$	100	2490.706	2491.457	Fe II	P	
50	2473.321	2474.069	Fe II	P		60	2490.858	2491.610	Fe II	P	
30	2473.386	2474.134		P		2000	2491.1547	2491.9062	Fe I	CA	$a^5D_1 - x^5F_2$
15	2473.671	2474.419		P		30	2491.193	2491.945		P	
30	2474.054	2474.801	Fe II	P		100	2491.396	2492.148	Fe II	P	
60	2474.442	2475.190		P		40	2491.466	2492.218		P	
10	2474.766	2475.514	Fe II	P		20	2491.673	2492.425		P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
30	2491.982	2492.734	Fe I	P	$b^3F_4 - t^3H_4$	20	2513.785	2514.542		P	
30	2492.229	2492.980	Fe I	P	$b^3F_4 - q^3G_4$	8	2513.8487	2514.6055	Fe I	CA	$b^3F_2 - q^3G_3$
25	2492.344	2493.095	Fe II	P		30	2514.2794	2515.0363		JA	
30	2492.377	2493.129		P		20	2514.3059	2515.0628		JA	
30	2492.6305	2493.3824	Fe I	CA	$a^5F_3 - x^3G_3$	50	2514.3831	2515.1400	Fe II	JA	
15	2492.680	2493.432	Fe I	P		8	2514.520	2515.277		P	
10	2492.890	2493.641		P		15	2514.569	2515.326		P	
100	2493.184	2493.936	Fe II	P		20	2514.7091	2515.4661		JA	
500	2493.262	2494.014	Fe II	JA		12	2515.119	2515.876	Fe II	P	
15	2493.751	2494.503		P		0	2515.8543	2516.6115	Fe I	CA	$a^3F_3 - u^3D_2$
20	2493.876	2494.628	Fe II	P		50	2516.112	2516.869		JA	
60	2494.0005	2494.7526	Fe I	CA	$a^5F_1 - v^5F_2$	15	2516.2502	2517.0076	Fe I	CA	$a^5F_4 - z^3H_4$
50	2494.2515	2495.0037	Fe I	CA	$a^5F_5 - z^3H_5$	80	2516.5705	2517.3279	Fe I	CA	$a^5F_3 - z^1G_4$
10	2494.5094	2495.2617	Fe I	CA	$a^5F_4 - z^1G_4$	50	2517.131	2517.889	Fe II	JA	
6	2494.781	2495.533	Fe I	P		300	2517.6615	2518.4192	Fe I	CA	$a^5F_2 - w^5G_3$
100	2495.871	2496.623	Fe I	P	$a^5F_5 - z^3H_6$	800	2518.1020	2518.8597	Fe I	CA	$a^5D_2 - x^5D_1$
8	2496.337	2497.089		P		8	2518.533	2519.291		P	
15	2496.396	2497.149		P		15	2518.826	2519.584	Fe I	P	$b^3F_3 - g^3X_3$
600	2496.5333	2497.2861	Fe I	CA	$a^5F_4 - w^5G_5$	60	2519.0460	2519.8052	Fe II	JA	
40	2496.792	2497.544		P		15	2519.201	2519.960		P	
20	2496.991	2497.744	Fe I	P	$b^3F_4 - q^3G_5$	150	2519.6292	2520.3874	Fe I	CA	$a^5F_1 - w^5G_2$
5	2497.714	2498.467	Fe II	P		8	2520.262	2521.020	Fe II	P	
50	2497.819	2498.572	Fe II	P		8	2520.868	2521.627		P	
8	2498.082	2498.835	Fe II	P		25	2520.9713	2521.7298	Fe I	JA	
8	2498.203	2498.957		P		40	2521.0920	2521.8505	Fe II	JA	
5	2498.343	2499.096	Fe II	P		8	2521.218	2521.977	Fe II	JA	
8	2498.819	2499.572		P		30	2521.8155	2522.5742	Fe II	JA	
150	2498.8975	2499.6508	Fe I	JA	$a^5D_3 - y^7P_4$	40	2521.9183	2522.6770	Fe I	CA	$a^5F_4 - w^3D_3$
40	2500.924	2501.678	Fe II	JA		15	2522.197	2522.956	Fe II	JA	
1000	2501.1323	2501.8861	Fe I	CA	$a^5D_4 - x^5D_3$	50	2522.4798	2523.2386	Fe I	CA	$a^5F_4 - z^3H_5$
40	2501.312	2502.066	Fe II	JA		30	2522.511	2523.270		P	
25	2501.652	2502.406		P		4000	2522.8494	2523.6083	Fe I	CA	$a^5D_4 - x^5D_4$
50	2501.6935	2502.4475	Fe I	CA	$a^5F_5 - x^3F_4$	50	2522.892	2523.651		JA	
12	2501.725	2502.479		P		40	2523.137	2523.897		JA	
60	2502.3930	2503.1471	Fe II	JA		12	2523.323	2524.082		P	
25	2502.4907	2503.2449	Fe I	JA		15	2523.374	2524.133		P	
40	2503.3265	2504.0809	Fe II	JA		15	2523.441	2524.200	Fe II	P	
25	2503.4921	2504.2465	Fe I	CA	$b^3F_3 - q^3G_3$	200	2523.6618	2524.4209	Fe I	JA	
20	2503.566	2504.320	Fe II	P		20	2523.998	2524.758		JA	
60	2503.8742	2504.6287	Fe II	JA		20	2524.108	2524.867		P	
12	2505.011	2505.766	Fe I	P	$b^3F_4 - t^3H_5$	500	2524.2927	2525.0519	Fe I	CA	$a^5D_1 - x^5D_0$
20	2505.4397	2506.1945		JA		12	2524.602	2525.361	Fe I	P	
40	2505.4849	2506.2398	Fe I	JA		100	2525.0239	2525.7833	Fe I	JA	
25	2505.653	2506.408		P		15	2525.109	2525.868	Fe II	P	
80	2506.0934	2506.8484	Fe II	JA		200	2525.3881	2526.1476	Fe II	JA	
12	2506.434	2507.189	Fe II	P		12	2525.862	2526.622	Fe II	P	
15	2506.574	2507.329	Fe I	P	$b^3F_3 - t^3H_4$	8	2525.919	2526.679	Fe II	JA	
40	2506.7963	2507.5515	Fe II	JA		25	2526.075	2526.835	Fe II	JA	
25	2506.908	2507.663		JA		25	2526.198	2526.957		P	
8	2507.026	2507.781	Fe II	P		300	2526.2941	2527.0538	Fe II	JA	
15	2507.688	2508.443	Fe II	P		8	2526.836	2527.596	Fe II	JA	
15	2507.739	2508.494		P		15	2526.909	2527.668		P	
500	2507.8999	2508.6553	Fe I	CA	$a^5F_3 - w^5G_4$	20	2527.105	2527.865	Fe II	JA	
30	2508.3411	2509.0966	Fe II	JA		20	2527.267	2528.027	Fe I	P	
50	2508.7530	2509.5086	Fe I	CA	$a^5F_2 - x^3G_3$	2000	2527.4349	2528.1949	Fe I	CA	$a^5D_3 - x^5D_3$
15	2509.123	2509.879	Fe II	P		30	2527.705	2528.465	Fe II	JA	
12	2509.866	2510.621	Fe II	P		15	2528.172	2528.932		JA	
1000	2510.8348	2511.5909	Fe I	CA	$a^5D_3 - x^5D_2$	15	2528.508	2529.268		P	
12	2511.382	2512.138	Fe II	P		20	2528.877	2529.638	Fe II	JA	
120	2511.7606	2512.5169	Fe II	JA		20	2529.077	2529.838	Fe II	JA	
80	2512.2754	2513.0319	Fe I	CA	$a^5F_5 - u^5D_4$	800	2529.1348	2529.8952	Fe I	CA	$a^5D_2 - x^5D_2$
400	2512.3649	2513.1213	Fe I	CA	$a^5D_3 - y^7P_3$	25	2529.229	2529.989	Fe II	P	
15	2512.521	2513.278	Fe II	P		80	2529.308	2530.069	Fe I	JA	$b^3F_2 - g^3X_3$
15	2513.498	2514.255		P		250	2529.549	2530.310	Fe II	JA	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
150	2529.8357	2530.5963	Fe I	CA	$a^5D_1 - x^5D_1$	15	2547.338	2548.102	Fe II	P	
40	2530.108	2530.869	Fe II	JA		15	2548.084	2548.849	Fe II	P	
200	2530.6872	2531.4480	Fe I	CA	$a^5D_2 - y^7P_3$	15	2548.325	2549.090	Fe II	P	
15	2530.969	2531.730	P			20	2548.589	2549.353	Fe II	P	
8	2531.429	2532.190	Fe I	P	$b^3F_3 - r^3G_3$	100	2548.743	2549.508	Fe II	P	
20	2531.871	2532.632	Fe II	JA		20	2548.912	2549.677	Fe II	JA	
12	2532.373	2533.134	P			15	2548.922	2549.688	Fe II	P	
25	2532.8754	2533.6366	Fe I	CA	$a^5F_3 - x^3F_2$	80	2549.083	2549.848	Fe II	P	
15	2533.140	2533.902	P			80	2549.395	2550.160	Fe II	P	
120	2533.627	2534.388	Fe II	JA		60	2549.461	2550.226	Fe II	P	
12	2533.737	2534.498	P			600	2549.6132	2550.3784	Fe I	CA	$a^5D_3 - x^5D_4$
60	2533.804	2534.565	Fe I	JA		40	2549.767	2550.532	Fe II	P	
100	2534.416	2535.178	Fe II	JA		60	2550.027	2550.793	Fe II	P	
25	2535.1277	2535.8895	Fe I	CA	$a^5F_2 - 1 \quad 2$	25	2550.149	2550.914	Fe II	P	
10	2535.362	2536.124	Fe II	P		12	2550.506	2551.271	Fe II	P	
40	2535.449	2536.211	JA			50	2550.683	2551.448	Fe II	P	
120	2535.486	2536.248	Fe II	JA		40	2551.092	2551.858	Fe I	P	
400	2535.6074	2536.3693	Fe I	CA	$a^5D_0 - x^5D_1$	12	2551.205	2551.970	Fe II	P	
60	2536.673	2537.435	Fe II	P		40	2552.6059	2553.3717	Fe I	CA	$a^5D_1 - y^7P_2$
10	2536.697	2537.459	P			15	2552.8306	2553.5965	Fe I	CA	$a^5F_3 - u^5D_2$
200	2536.7925	2537.5547	Fe I	CA	$a^5F_3 - w^3D_2$	15	2555.067	2555.834	Fe II	P	
200	2536.803	2537.565	Fe II	P		15	2555.219	2555.985	P		
50	2536.845	2537.608	Fe II	JA		15	2555.453	2556.219	Fe II	P	
50	2537.138	2537.900	Fe II	JA		0	2555.6466	2556.4132	Fe I	CA	$a^5F_1 - w^3D_1$
50	2537.170	2537.932	P			15	2556.3032	2557.0700	Fe I	CA	$a^3F_3 - u^3G_4$
40	2537.4585	2538.2208	Fe I	CA	$a^3F_4 - u^3G_5$	40	2556.863	2557.630	Fe I	P	$a^5F_5 - z^3I_6$
50	2538.204	2538.967	Fe II	JA		12	2557.2700	2558.0370	Fe I	CA	$a^3F_4 - x^3H_5$
40	2538.501	2539.264	Fe II	JA		10	2557.505	2558.272	Fe II	P	
20	2538.680	2539.443	Fe II	P		5	2558.478	2559.245	P		
40	2538.6992	2539.4618	Fe I	CA	$a^5F_3 - z^3H_4$	5	2558.822	2559.589	P		
100	2538.799	2539.562	Fe II	JA		15	2559.270	2560.038	Fe II	P	
25	2538.829	2539.592	P			12	2559.924	2560.692	Fe II	P	
100	2538.909	2539.672	Fe II	JA		40	2560.281	2561.049	Fe II	P	
150	2538.993	2539.756	Fe II	JA		20	2560.5565	2561.3242	Fe I	CA	$a^5F_1 - x^3F_2$
25	2539.328	2540.091	P			8	2561.2713	2562.0392	Fe I	CA	$a^5F_2 - w^3D_3$
50	2539.3566	2540.1194	Fe I	CA	$a^5F_4 - u^5D_3$	10	2561.700	2562.468	P		
6	2539.5873	2540.3501	Fe I	CA	$a^5F_3 - x^3F_3$	12	2561.8551	2562.6231	Fe I	CA	$a^5F_1 - u^5D_1$
6	2539.854	2540.617	P			25	2562.092	2562.860	Fe II	P	
10	2540.441	2541.204	P			20	2562.2216	2562.9898	Fe I	CA	$a^5F_3 - u^5D_3$
20	2540.523	2541.286	Fe II	JA		20	2562.225	2562.993	Fe I	P	$a^5F_1 - u^5D_0$
200	2540.661	2541.425	Fe II	JA		400	2562.535	2563.304	Fe II	P	
40	2540.730	2541.493	JA			15	2563.399	2564.168	P		
600	2540.9719	2541.7350	Fe I	CA	$a^5D_1 - x^5D_2$	200	2563.477	2564.245	Fe II	P	
80	2541.101	2541.865	Fe II	JA		8	2563.8087	2564.5773	Fe I	CA	$a^5F_3 - u^5D_4$
60	2541.836	2542.600	Fe II	JA		12	2564.5598	2565.3285	Fe I	CA	$a^5F_1 - w^3D_2$
300	2542.101	2542.865	Fe I	JA	$b^3F_2 - r^3G_3$	20	2566.220	2566.989	Fe II	P	
20	2542.736	2543.500	JA			10	2566.401	2567.171	Fe II	P	
25	2542.785	2543.548	Fe II	P		60	2566.912	2567.682	Fe II	P	
15	2543.079	2543.843	Fe II	P		10	2567.631	2568.401	Fe II	P	
60	2543.377	2544.141	Fe II	JA		8	2567.8589	2568.6284	Fe I	CA	$a^5P_1 - u^3F_2$
60	2543.430	2544.194	Fe II	P		12	2568.409	2569.178	Fe II	P	
250	2543.923	2544.687	Fe I	JA	$b^3F_3 - r^3G_4$	12	2568.865	2569.634	Fe I	P	$a^5F_2 - y^3P_1$
20	2544.658	2545.422	P			25	2569.596	2570.366	Fe I	P	$a^5F_5 - x^5G_4$
150	2544.705	2545.469	Fe I	P	$b^3F_4 - r^3G_5$	15	2569.7437	2570.5137	Fe I	CA	$a^5F_2 - u^5D_2$
40	2544.972	2545.737	Fe II	P		8	2569.779	2570.549	Fe II	P	
40	2545.220	2545.985	Fe II	JA		25	2570.525	2571.296	Fe II	P	
20	2545.444	2546.208	Fe II	P		30	2570.848	2571.618	Fe II	P	
800	2545.9785	2546.7429	Fe I	CA	$a^5D_2 - x^5D_3$	15	2572.7533	2573.5240	Fe I	CA	$a^3F_2 - u^3G_3$
12	2546.104	2546.869	P			12	2572.967	2573.738	Fe II	P	
40	2546.1745	2546.9389	Fe I	CA	$a^3P_2 - t^3F_3$	10	2573.211	2573.981	Fe II	P	
40	2546.442	2547.206	Fe II	P		150	2574.362	2575.133	Fe II	P	
10	2546.508	2547.272	P			50	2575.742	2576.514	Fe I	P	
80	2546.670	2547.434	Fe II	P		300	2576.6907	2577.4623	Fe I	CA	$a^5F_5 - x^5G_5$
80	2546.866	2547.631	Fe I	P		25	2576.861	2577.633	Fe II	P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
60	2577.919	2578.691	Fe II	P		40	2621.669	2622.451	Fe II	P	
15	2578.003	2578.774		P		3	2621.942	2622.724		P	
10	2578.209	2578.981		P		3	2621.965	2622.747		P	
15	2579.115	2579.887	Fe II	P		4	2623.107	2623.890	Fe II	P	
40	2579.2599	2580.0320	Fe I	CA	$a^5F_2 - u^5D_3$	20	2623.3657	2624.1484	Fe I	CA	$a^5D_1 - y^3D_1$
8	2579.413	2580.185	Fe II	P		400	2623.533	2624.316	Fe I	P	$a^5F_3 - x^5G_4$
12	2579.844	2580.616		P		6	2623.626	2624.409		P	
8	2580.0652	2580.8376	Fe I	CA	$a^5F_1 - y^3P_1$	15	2623.726	2624.508	Fe II	P	
8	2580.2941	2581.0665	Fe I	CA	$a^3F_3 - v^3F_4$	5	2624.661	2625.444		P	
12	2580.4530	2581.2254	Fe I	CA	$a^5F_2 - y^3P_2$	50	2625.490	2626.273	Fe II	P	
8	2581.110	2581.882	Fe II	P		200	2625.667	2626.450	Fe II	P	
8	2581.464	2582.237		P		15	2626.501	2627.284	Fe II	P	
50	2581.796	2582.569		P		3	2627.1272	2627.9108	Fe I	CA	$a^3F_3 - x^1G_4$
8	2582.413	2583.186	Fe II	P		3	2627.160	2627.944		P	
100	2582.580	2583.353	Fe II	P		5	2627.2243	2628.0078	Fe I	CA	$a^5F_4 - y^3G_4$
1500	2584.5363	2585.3098	Fe I	ED	$a^5F_5 - x^5G_6$	150	2628.293	2629.076	Fe II	P	
60	2593.510	2594.285	Fe I	BW	$z^7D_5 - h^7D_5$	15	2629.5725	2630.3566	Fe I	CA	$a^5D_0 - y^3D_1$
0	2594.1514	2594.9271	Fe I	CA	$a^5F_4 - x^5G_3$	5	2629.721	2630.505		P	
0	2595.4251	2596.2011	Fe I	CA	$a^5F_1 - y^3P_0$	5	2629.885	2630.669		P	
10	2603.554	2604.332	Fe I	P		20	2630.071	2630.855	Fe II	P	
3	2604.003	2604.781		P		3	2630.498	2631.282		P	
15	2604.754	2605.532	Fe I	P		30	2631.012	2631.796		P	
12	2604.864	2605.642	Fe I	P		250	2631.047	2631.831	Fe II	P	
15	2605.037	2605.815	Fe II	P		250	2631.322	2632.106	Fe II	P	
20	2605.339	2606.117	Fe II	P		50	2631.608	2632.393	Fe II	P	
20	2605.424	2606.202	Fe II	P		100	2632.2369	2633.0216	Fe I	CA	$a^5F_2 - x^5G_2$
60	2605.6566	2606.4351	Fe I	CA	$a^5F_5 - y^3G_5$	20	2632.5939	2633.3788	Fe I	CA	$a^5D_2 - y^3D_2$
8	2605.902	2606.680	Fe II	P		5	2632.988	2633.773		P	
10	2606.303	2607.081		P		20	2633.122	2633.907		P	
300	2606.512	2607.291	Fe II	P		8	2633.203	2633.989	Fe II	P	
800	2606.8269	2607.6056	Fe I	CA	$a^5F_4 - x^5G_5$	2	2633.621	2634.406		P	
10	2607.529	2608.307	Fe II	P		3	2634.740	2635.525		P	
6	2607.628	2608.407	Fe II	P		3	2635.304	2636.089	Fe II	P	
20	2608.577	2609.356	Fe I	P		5	2635.402	2636.188	Fe II	P	
4	2608.852	2609.631	Fe II	P		10	2635.723	2636.508		P	
6	2609.036	2609.815		P		300	2635.8092	2636.5948	Fe I	CA	$a^5F_2 - x^5G_3$
12	2609.125	2609.904	Fe II	P		5	2635.932	2636.717		P	
10	2609.221	2610.000	Fe I	P	$a^3G_3 - g^3X_3$	6	2635.971	2636.757	Ne I	P	
4	2609.440	2610.219	Fe II	P		6	2636.075	2636.860		P	
8	2609.579	2610.359		P		30	2636.4781	2637.2639	Fe I	CA	$a^5F_4 - y^3G_5$
10	2609.866	2610.646	Fe II	P		2	2637.054	2637.840		P	
15	2610.006	2610.785		P		5	2637.497	2638.284	Fe II	P	
4	2610.442	2611.222		P		15	2637.644	2638.430	Fe II	P	
10	2610.7505	2611.5302	Fe I	CA	$a^5D_2 - y^3D_1$	12	2638.560	2639.346		P	
3	2611.002	2611.782		P		10	2638.655	2639.441		P	
20	2611.073	2611.853	Fe II	P		5	2638.711	2639.497		P	
600	2611.873	2612.653	Fe II	P		15	2638.747	2639.533		P	
20	2612.7722	2613.5523	Fe I	CA	$a^5D_3 - y^3D_2$	12	2639.564	2640.351	Fe II	P	
8	2613.265	2614.045		P		6	2641.029	2641.815	Fe I	P	
12	2613.416	2614.196	Fe II	P		8	2641.084	2641.870		P	
8	2613.925	2614.705	Ne I	P		5	2641.123	2641.910	Fe II	P	
4	2614.370	2615.151		P		50	2641.6456	2642.4326	Fe I	CA	$a^5F_4 - x^3D_3$
25	2614.4940	2615.2745	Fe I	CA	$a^5F_3 - x^5G_2$	8	2642.013	2642.800	Fe II	P	
20	2615.422	2616.202	Fe I	P		3	2643.647	2644.434	Fe II	P	
10	2615.849	2616.630		P		200	2643.9980	2644.7855	Fe I	CA	$a^5F_1 - x^5G_2$
12	2616.739	2617.520		P		2	2644.097	2644.885	Ne I	P	
8	2617.132	2617.914		P		6	2644.628	2645.416		P	
250	2618.0183	2618.7997	Fe I	CA	$a^5F_3 - x^5G_3$	5	2645.083	2645.871	Fe II	P	
25	2618.7098	2619.4913	Fe I	CA	$a^5D_4 - y^3D_3$	3	2645.334	2646.122	Fe II	P	
20	2619.074	2619.855	Fe II	P		10	2645.4216	2646.2095	Fe I	CA	$a^5D_1 - y^3D_2$
10	2620.172	2620.953	Fe II	P		2	2645.645	2646.433	Ne I	P	
12	2620.408	2621.190	Fe II	P		10	2646.032	2646.820		P	
20	2620.695	2621.477	Fe II	P		5	2646.098	2646.886		P	
12	2621.623	2622.405		P		20	2647.5575	2648.3459	Fe I	CA	$a^5D_3 - y^3D_3$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
12	2647.918	2648.707		P		6	2672.548	2673.342	Fe II	P	
2	2648.446	2649.235		P		3	2672.784	2673.579		P	
2	2649.222	2650.010		P		5	2673.086	2673.881		P	
6	2649.469	2650.258	Fe II	P		15	2673.2129	2674.0075	Fe I	CA	$a^5F_1 - x^3D_1$
2	2650.481	2651.270	Fe II	P		2	2674.7146	2675.5095	Fe I	CA	$a^3P_2 - w^1D_2$
3	2651.270	2652.059	Fe II	P		2	2674.983	2675.778		P	
25	2651.7063	2652.4959	Fe I	CA	$a^5F_3 - y^3G_4$	15	2675.275	2676.070	Ne I	P	
25	2651.71	2652.50	Fe II	P		1	2675.440	2676.235	Fe II	P	
2	2652.566	2653.356	Fe II	P		6	2676.078	2676.874		P	
2	2653.557	2654.347	Fe II	P		1	2676.159	2676.955	Fe I	P	
2	2653.667	2654.457	Fe II	P		2	2676.423	2677.219		P	
5	2654.629	2655.419	Fe II	P		6	2676.883	2677.678	Fe II	P	
8	2655.692	2656.483	Fe II	P		1	2677.389	2678.185	Ne I	P	
40	2656.147	2656.938	Fe I	P	$a^3H_6 - x^3I_7$	15	2677.905	2678.701	Ne I	P	
12	2656.7920	2657.5826	Fe I	CA	$a^3F_4 - y^3H_5$	8	2677.971	2678.766		P	
3	2657.171	2657.961	Fe II	P		6	2678.030	2678.826		P	
12	2657.554	2658.345	Ne I	P		1	2678.142	2678.938		P	
6	2657.588	2658.378	Fe II	P		1	2678.270	2679.066	Fe II	P	
3	2657.621	2658.411		P		12	2678.691	2679.487		P	
3	2657.921	2658.712	Fe II	P		600	2679.0622	2679.8582	Fe I	CA	$a^5F_5 - w^5F_5$
10	2658.252	2659.043	Fe II	P		3	2679.208	2680.004	Ne I	P	
8	2658.478	2659.269		P		2	2679.714	2680.510		P	
3	2658.946	2659.737		P		5	2679.775	2680.571	Fe II	P	
4	2659.249	2660.041		P		10	2680.117	2680.914		P	
5	2660.236	2661.027	Fe II	P		8	2680.160	2680.957	Fe II	P	
15	2660.3973	2661.1888	Fe I	CA	$a^5F_2 - y^3G_3$	3	2680.233	2681.029	Fe II	P	
8	2661.1911	2661.9828	Fe I	CA	$a^5F_2 - x^3D_1$	2	2680.273	2681.069		P	
12	2661.305	2662.096		P		25	2680.4526	2681.2489	Fe I	CA	$a^5F_2 - x^3D_2$
8	2661.416	2662.207		P		15	2680.702	2681.499	Fe II	P	
6	2661.771	2662.563	Fe II	P		15	2680.818	2681.615	Fe II	P	
30	2662.0562	2662.8480	Fe I	CA	$a^5F_3 - x^3D_2$	4	2680.9127	2681.7091	Fe I	CA	$a^3F_3 - v^3G_3$
20	2662.304	2663.096		P		3	2680.991	2681.788		P	
5	2662.558	2663.350	Fe II	P		2	2681.023	2681.820		P	
3	2662.901	2663.693		P		2	2681.042	2681.839	Fe II	P	
2	2663.165	2663.957	Fe I	P		12	2681.203	2681.999		P	
3	2663.260	2664.050	Bl	P		10	2681.461	2682.257		P	
10	2663.343	2664.135		P		20	2681.586	2682.383	Fe I	P	$z^7D_4 - 3 \quad 4$
3	2663.779	2664.572		P		1	2681.885	2682.681		P	
5	2663.945	2664.737	Fe II	P		20	2682.211	2683.008		P	
15	2664.043	2664.835	Fe I	P		6	2682.511	2683.308	Fe II	P	
12	2664.168	2664.960		P		5	2682.576	2683.373		P	
6	2664.260	2665.052	Fe II	P		6	2682.998	2683.795	Fe II	P	
60	2664.663	2665.456	Fe II	P		2	2683.033	2683.830		P	
15	2665.541	2666.333	Fe II	P		8	2683.082	2683.879		P	
25	2666.3986	2667.1915	Fe I	CA	$a^5F_3 - x^3D_3$	4	2683.710	2684.507		P	
8	2666.455	2667.248		P		4	2683.776	2684.573	Fe II	P	
30	2666.636	2667.429	Fe II	P		6	2683.830	2684.627		P	
60	2666.751	2667.544		P		15	2683.936	2684.733		P	
300	2666.8123	2667.6054	Fe I	CA	$a^5F_5 - v^5D_4$	20	2684.068	2684.865		P	
60	2666.9652	2667.7583	Fe I	CA	$a^3F_4 - v^3G_5$	1	2684.517	2685.314		P	
10	2667.220	2668.010	Bl	P		3	2684.584	2685.381		P	
12	2667.9125	2668.7058	Fe I	CA	$a^5D_2 - y^3D_3$	500	2684.754	2685.551	Fe II	P	
2	2668.711	2669.505		P		1	2684.900	2685.698		P	
15	2668.910	2669.700	Bl	P		1	2684.963	2685.760	Fe II	P	
5	2668.963	2669.756		P		5	2685.099	2685.897		P	
12	2669.008	2669.801	Fe II	P		4	2685.140	2685.940	Bl	P	
25	2669.493	2670.286	Fe I	P	$a^3H_5 - x^3I_6$	3	2685.253	2686.050	Ne I	P	
8	2669.722	2670.516		P		6	2685.436	2686.233	Fe II	P	
2	2669.933	2670.726	Fe II	P		2	2685.863	2686.661		P	
8	2670.786	2671.580		P		1	2686.107	2686.905	Fe II	P	
5	2670.992	2671.786		P		15	2686.218	2687.015	Fe II	P	
10	2671.922	2672.716	Fe II	P		1	2686.436	2687.234	Fe II	P	
10	2672.139	2672.933	Fe II	P		1	2686.604	2687.402		P	
12	2672.480	2673.275		P		12	2686.742	2687.540	Ne I	P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
1	2686.952	2687.750	Fe II	P		10	2700.356	2701.157	Fe II	P	
20	2687.054	2687.852		P		3	2701.104	2701.905		P	
10	2687.415	2688.213		P		8	2701.145	2701.946		P	
1	2687.534	2688.332		P		4	2701.198	2701.999		P	
15	2687.801	2688.599		P		8	2701.541	2702.343	Fe II	P	
3	2688.191	2688.990	Fe II	P		6	2701.639	2702.440	Ne I	P	
400	2689.2125	2690.0109	Fe I	CA	$a^5F_4 - v^5D_3$	8	2701.9092	2702.7106	Fe I	CA	$b^3F_4 - t^3F_3$
20	2689.415	2690.213		P		2	2702.297	2703.099		P	
25	2689.8292	2690.6278	Fe I	CA	$a^3F_3 - y^3H_4$	2	2702.407	2703.208		P	
12	2689.881	2690.680		P		8	2702.4492	2703.2508	Fe I	CA	$a^3H_6 - u^3H_5$
12	2690.0686	2690.8672	Fe I	CA	$a^5D_4 - y^3F_3$	6	2702.560	2703.362	Ne I	P	
5	2690.178	2690.977		P		1	2702.762	2703.564		P	
2	2690.422	2691.220		P		60	2703.988	2704.790	Fe II	P	
8	2691.490	2692.289		P		8	2704.748	2705.551		P	
6	2691.737	2692.536	Fe II	P		2	2704.866	2705.668		P	
10	2692.2482	2693.0473	Fe I	CA	$a^3F_4 - w^3F_4$	1	2705.081	2705.883		P	
3	2692.449	2693.249		P		80	2706.0121	2706.8146	Fe I	CA	$a^3H_6 - u^3H_6$
5	2692.520	2693.320		P		20	2706.067	2706.870		P	
60	2692.602	2693.402	Fe II	P		400	2706.5822	2707.3848	Fe I	CA	$a^5F_3 - v^5D_2$
6	2692.6495	2693.4487	Fe I	CA	$a^5F_1 - x^3D_2$	3	2706.821	2707.623		P	
3	2692.806	2693.605		P		2	2706.879	2707.682		P	
6	2692.834	2693.633	Fe II	P		6	2706.913	2707.716	Fe II	P	
3	2693.005	2693.805		P		2	2707.000	2707.803		P	
5	2693.355	2694.155		P		5	2707.034	2707.837		P	
3	2693.402	2694.202		P		10	2707.448	2708.251	Fe I	P	$b^3F_4 - f X_3$
2	2693.479	2694.279		P		1	2707.709	2708.512		P	
3	2693.539	2694.339		P		3	2708.003	2708.806		P	
2	2693.857	2694.656	Fe II	P		2	2708.040	2708.843		P	
3	2694.047	2694.847		P		5	2708.417	2709.220	Fe II	P	
5	2694.184	2694.983		P		60	2708.5712	2709.3742	Fe I	CA	$b^3F_4 - t^3F_4$
5	2694.2386	2695.0382	Fe I	CA	$a^5D_3 - y^3F_2$	5	2708.653	2709.456		P	
15	2694.536	2695.336	Fe I	P	$z^7D_5 - 2_4$	3	2708.890	2709.693		P	
30	2695.0344	2695.8342	Fe I	CA	$a^5F_5 - w^5F_4$	20	2709.054	2709.858	Fe II	P	
2	2695.149	2695.949		P		4	2709.691	2710.495	Fe I	P	$b^3G_5 - q^3G_5$
1	2695.180	2695.980		P		20	2709.989	2710.793	Fe I	P	$z^7D_4 - 2_4$
4	2695.209	2696.009		P		8	2710.037	2710.840	Fe II	P	
1	2695.308	2696.108		P		3	2710.417	2711.221		P	
3	2695.362	2696.161		P		3	2710.440	2711.244		P	
20	2695.530	2696.330		P		20	2710.5437	2711.3473	Fe I	CA	$a^3F_2 - v^3G_3$
3	2695.590	2696.390		P		4	2710.938	2711.741		P	
12	2695.651	2696.451	Fe I	P	$z^7D_3 - 3_4$	1	2711.011	2711.815		P	
5	2695.681	2696.481		P		2	2711.051	2711.855		P	
25	2695.989	2696.789		P		2	2711.195	2711.999		P	
6	2696.123	2696.923		P		10	2711.460	2712.263		P	
50	2696.283	2697.083	Fe I	P	$z^7D_5 - 1_5$	200	2711.6554	2712.4592	Fe I	CA	$a^5F_4 - w^5F_5$
8	2696.592	2697.392	Fe II	P		10	2711.842	2712.646	Fe II	P	
2	2696.786	2697.586		P		15	2712.296	2713.100	Fe II	P	
2	2696.895	2697.695		P		10	2712.391	2713.195	Fe II	P	
1	2696.953	2697.753		P		2	2712.685	2713.489		P	
20	2697.0210	2697.8213	Fe I	CA	$a^3F_3 - v^3G_4$	5	2713.445	2714.249		P	
6	2697.331	2698.132	Fe II	P		6	2713.483	2714.287		P	
12	2697.461	2698.261	Fe II	P		10	2713.640	2714.444		P	
6	2697.721	2698.521	Fe II	P		20	2714.0591	2714.8635	Fe I	CA	$b^3F_3 - t^3F_2$
10	2697.797	2698.598	Fe II	P		80	2714.413	2715.218	Fe II	P	
5	2697.982	2698.782		P		40	2714.8691	2715.6737	Fe I	CA	$a^5F_3 - v^5D_3$
20	2698.165	2698.965	Fe I	P		8	2714.938	2715.742		P	
5	2698.285	2699.085		P		5	2715.120	2715.925		P	
1	2698.377	2699.178		P		3	2715.171	2715.976		P	
200	2699.1064	2699.9072	Fe I	CA	$a^5F_4 - v^5D_4$	5	2715.3205	2716.1252	Fe I	CA	$a^5D_2 - y^3F_2$
3	2699.199	2700.000	Fe II	P		6	2715.405	2716.209		P	
6	2699.452	2700.253		P		3	2715.500	2716.300	Bl	P	
1	2699.542	2700.342		P		6	2715.685	2716.490	Fe II	P	
6	2699.622	2700.423	Fe II	P		3	2716.002	2716.807		P	
4	2699.775	2700.576		P		50	2716.217	2717.022	Fe II	P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
50	2716.2575	2717.0624	Fe I	CA	$a^3H_4 - u^3F_4$	150	2743.5651	2744.3766	Fe I	CA	$a^5F_3 - w^5F_3$
6	2716.4184	2717.2234	Fe I	CA	$a^3H_5 - u^3H_4$	200	2744.0679	2744.8795	Fe I	CA	$a^5D_0 - y^5P_1$
15	2716.564	2717.369	Fe II	P		80	2744.5274	2745.3392	Fe I	CA	$a^5F_2 - w^5D_1$
3	2716.701	2717.506	Fe II	P		300	2746.483	2747.295	Fe II	P	
15	2717.3658	2718.1710	Fe I	CA	$a^5F_4 - w^5F_3$	40	2746.982	2747.795	Fe I	P	$a^5F_5 - z^5H_6$
50	2717.7865	2718.5917	Fe I	CA	$a^5F_3 - y^5S_2$	1	2747.5549	2748.3674	Fe I	CA	$a^5P_2 - t^5P_2$
50	2717.873	2718.679	Fe II	P		100	2749.320	2750.133	Fe II	P	
12	2717.929	2718.734	Fe II	P		500	2749.485	2750.298	Fe II	P	
250	2718.4362	2719.2416	Fe I	CA	$a^5F_2 - v^5D_1$	1200	2750.1405	2750.9537	Fe I	CA	$a^5D_3 - y^5P_3$
8	2718.640	2719.446	Fe II	P		5	2750.6967	2751.5099	Fe I	CA	$a^5P_1 - t^5P_1$
4000	2719.0275	2719.8331	Fe I	CA	$a^5D_4 - y^5P_3$	30	2750.8735	2751.6868	Fe I	CA	$a^5P_3 - 10_3$
40	2719.0604	2719.8660	Fe I	CA	$b^3F_3 - t^3F_3$	20	2751.125	2751.938	Fe II	P	
12	2719.301	2720.107	Fe II	P		4	2751.8029	2752.6164	Fe I	CA	$a^3F_2 - v^3D_1$
100	2719.4199	2720.2256	Fe I	CA	$a^3H_5 - u^3H_5$	20	2752.150	2752.964	Fe II	P	
15	2719.592	2720.398	Fe II	P		12	2753.098	2753.911	Fe II	P	
50	2720.1967	2721.0026	Fe I	CA	$a^5P_3 - 13_4$	80	2753.287	2754.101	Fe II	P	
0	2720.5188	2721.3247	Fe I	CA	$a^5D_3 - y^3F_3$	50	2753.686	2754.500	Fe I	P	$a^5F_1 - w^5D_0$
1500	2720.9026	2721.7087	Fe I	CA	$a^5D_3 - y^5P_2$	150	2754.0324	2754.8465	Fe I	CA	$a^5F_2 - w^5F_2$
8	2721.108	2721.914	Fe I	P		100	2754.4258	2755.2399	Fe I	CA	$a^5F_3 - w^5F_4$
12	2722.0387	2722.8450	Fe I	CA	$a^3F_4 - y^1G_4$	30	2754.888	2755.703	Fe II	P	
10	2722.062	2722.869	Fe II	P		12	2754.942	2755.757	Fe II	P	
5	2722.740	2723.547	Fe II	P		15	2755.1809	2755.9953	Fe I	CA	$a^3H_5 - s^3G_4$
400	2723.5778	2724.3845	Fe I	CA	$a^5D_2 - y^5P_1$	800	2755.734	2756.549	Fe II	P	
8	2723.787	2724.594	Ne I	P		4	2756.086	2756.901	Fe II	P	
12	2724.339	2725.146	Fe I	P	$z^7D_3 - 2_4$	4	2756.2672	2757.0818	Fe I	CA	$a^5D_3 - y^3F_4$
10	2724.670	2725.477	Fe II	P		250	2756.3284	2757.1430	Fe I	CA	$a^5D_1 - y^5P_2$
30	2724.884	2725.691	Fe II	P		6	2756.509	2757.324	Fe II	P	
150	2724.9531	2725.7601	Fe I	CA	$a^5F_3 - v^5D_4$	80	2756.62	2757.43	Bl	P	
8	2725.285	2726.092	Fe I	P		8	2757.030	2757.845	Fe II	P	
5	2725.3292	2726.1363	Fe I	CA	$a^3F_3 - w^3F_3$	100	2757.3157	2758.1306	Fe I	CA	$a^5F_1 - w^5D_1$
12	2725.6014	2726.4085	Fe I	CA	$a^5F_2 - v^5D_2$	30	2757.422	2758.237	Fe I	P	
80	2726.055	2726.862	Fe I	P	$a^5F_1 - v^5D_0$	8	2757.535	2758.350	Fe I	P	
50	2726.2351	2727.0425	Fe I	CA	$b^3F_2 - t^3F_2$	5	2757.836	2758.651	Fe II	P	
25	2727.383	2728.191	Fe II	P		5	2757.858	2758.673	Fe I	P	
80	2727.538	2728.346	Fe II	P		4	2758.749	2759.564	Fe I	P	
200	2728.0197	2728.8275	Fe I	CA	$a^5F_4 - w^5F_4$	6	2759.479	2760.294	Fe I	P	
50	2728.8196	2729.6275	Fe I	CA	$a^3H_4 - u^3H_4$	50	2759.813	2760.628	Fe I	P	$a^5F_1 - w^5F_1$
80	2728.905	2729.713	Fe II	P		25	2760.891	2761.707	Fe I	P	
8	2728.9690	2729.7770	Fe I	CA	$a^5D_1 - y^3F_2$	8	2761.183	2761.998	Fe II	P	
5	2729.329	2730.137	Fe II	P		8	2761.449	2762.265	Fe I	P	
10	2730.700	2731.508	Fe II	P		4	2761.4802	2762.2961	Fe I	CA	$a^3P_1 - w^1D_2$
40	2730.734	2731.542	Fe II	P		120	2761.7798	2762.5957	Fe I	CA	$a^5F_2 - w^5D_2$
40	2730.9819	2731.7904	Fe I	CA	$a^5F_1 - v^5D_1$	150	2761.812	2762.628	Fe II	P	
8	2731.243	2732.052	Fe II	P		150	2762.0264	2762.8424	Fe I	CA	$a^5F_3 - w^5D_3$
5	2731.2814	2732.0900	Fe I	CA	$b^3F_2 - t^3F_3$	20	2762.33	2763.15	Bl	P	
5	2732.008	2732.817	Fe II	P		12	2762.681	2763.497	Fe I	P	
1000	2733.5807	2734.3898	Fe I	CA	$a^5F_5 - w^5D_4$	120	2762.7719	2763.5881	Fe I	CA	$a^5P_1 - t^5P_2$
60	2734.0053	2734.8145	Fe I	CA	$a^5F_2 - v^5D_3$	25	2762.922	2763.738	Ne II	CP	
50	2734.2676	2735.0769	Fe I	CA	$a^5P_3 - t^5P_2$	120	2763.1093	2763.9256	Fe I	CA	$a^5F_2 - w^5F_3$
30	2734.6159	2735.4252	Fe I	CA	$a^5F_3 - w^5F_2$	20	2763.656	2764.472	Fe II	P	
500	2735.4751	2736.2847	Fe I	CA	$a^5F_4 - w^5D_3$	20	2764.118	2764.935	Fe I	P	
50	2735.6120	2736.4216	Fe I	CA	$a^5P_2 - t^5P_1$	30	2764.3230	2765.1396	Fe I	CA	$a^5P_2 - 10_3$
8	2736.9639	2737.7739	Fe I	CA	$a^5F_2 - y^5S_2$	25	2765.128	2765.945	Fe II	P	
500	2737.3096	2738.1196	Fe I	CA	$a^5D_1 - y^5P_1$	8	2765.224	2766.040	Fe II	P	
0	2737.6399	2738.4500	Fe I	CA	$a^3H_6 - s^3G_5$	4	2765.991	2766.808	Fe I	P	
120	2737.832	2738.643	Fe I	P		6	2766.372	2767.189	Ne I	P	
5	2738.2135	2739.0237	Fe I	CA	$a^5F_1 - v^5D_2$	12	2766.659	2767.476	Fe I	P	
400	2739.546	2740.357	Fe II	P		80	2766.9096	2767.7268	Fe I	CA	$a^5F_1 - w^5F_2$
8	2741.1015	2741.9124	Fe I	CA	$c^3P_2 - q^3G_3$	250	2767.5222	2768.3396	Fe I	CA	$a^5F_4 - w^5D_4$
1	2741.5767	2742.3878	Fe I	CA	$a^3F_2 - w^3F_2$	20	2768.105	2768.922	Fe I	P	
10	2742.0156	2742.8268	Fe I	CA	$a^5D_2 - y^3F_3$	15	2768.432	2769.249	Fe I	P	$a^5P_3 - y^1F_3$
250	2742.2542	2743.0654	Fe I	CA	$a^5F_3 - w^5D_2$	10	2768.580	2769.397	Fe I	P	
800	2742.4055	2743.2168	Fe I	CA	$a^5D_2 - y^5P_2$	12	2768.934	2769.752	Fe II	P	
200	2743.196	2744.008	Fe II	P		8	2769.153	2769.970	Fe II	P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
50	2769.2970	2770.1148	Fe I	ED	$a^3H_6 - v^3H_6$	30	2795.5401	2796.3643	Fe I	CA	$a^5F_4 - y^5G_3$
25	2769.355	2770.173	Fe II	P		15	2795.857	2796.681	Fe II	P	
40	2769.6713	2770.4891	Fe I	CA	$a^5F_5 - y^5G_4$	10	2796.627	2797.452	Fe II	P	
10	2769.835	2770.652	Fe II	P		2	2796.8706	2797.6951	Fe I	CA	$a^3F_3 - x^3P_2$
4	2770.505	2771.323	Fe II	P		10	2797.195	2798.019	Fe II	P	
8	2770.575	2771.393	Fe II	P		200	2797.7752	2798.5999	Fe I	ED	$a^5F_4 - z^5H_4$
10	2770.6951	2771.5132	Fe I	CA	$a^5P_2 - v^3P_1$	30	2799.146	2799.971	Fe I	P	
40	2771.880	2772.698	Fe I	P		30	2799.294	2800.119	Fe II	P	
300	2772.0736	2772.8921	Fe I	ED	$a^5F_5 - z^5H_5$	10	2800.467	2801.292	Fe II	P	
8	2772.1099	2772.9284	Fe I	CA	$a^5D_2 - y^5P_3$	6	2800.537	2801.362	Fe II	P	
20	2772.318	2773.137	Fe I	P	$a^5P_3 - b^3X_4$	6	2803.1663	2803.9924	Fe I	CA	$a^5D_3 - z^3G_3$
25	2772.508	2773.327	Fe I	P	$a^5P_2 - c^3X_3$	8	2803.430	2804.256	Fe II	P	
8	2772.826	2773.644	Fe I	P	$b^3G_4 - r^3G_4$	10	2803.6129	2804.4390	Fe I	CA	$a^3H_4 - v^3H_4$
50	2773.232	2774.050	Fe I	P		5	2803.936	2804.762	Fe II	P	
8	2773.659	2774.478	Fe II	P		400	2804.5206	2805.3469	Fe I	CA	$a^5F_4 - y^5G_4$
6	2773.9027	2774.7216	Fe I	CA	$a^3H_6 - v^3H_5$	10	2804.8622	2805.6886	Fe I	CA	$a^3G_4 - t^3F_3$
6	2774.1614	2774.9804	Fe I	CA	$a^5P_2 - x^1F_3$	5	2804.999	2805.826	Fe II	P	
20	2774.686	2775.505	Fe II	P		5	2805.104	2805.930	Fe II	P	
20	2774.7297	2775.5488	Fe I	CA	$a^5F_1 - w^5D_2$	6	2805.8079	2806.6346	Fe I	CA	$a^3F_4 - v^5F_5$
10	2774.938	2775.757	Fe I	P		5	2806.070	2806.897	Fe I	P	$a^3P_2 - 11_3$
10	2775.844	2776.663	Fe I	P		1500	2806.9843	2807.8115	Fe I	ED	$a^5F_4 - z^5H_5$
15	2776.397	2777.217	Fe I	P		3	2807.179	2808.006	Fe II	P	
3	2776.448	2777.267	Fe II	P		3	2807.2452	2808.0722	Fe I	CA	$a^5D_4 - z^5G_3$
15	2776.907	2777.727	Fe II	P		40	2808.3269	2809.1542	Fe I	CA	$a^5F_3 - z^5H_3$
15	2777.631	2778.450	Fe II	P		5	2808.398	2809.225	Fe II	P	
5	2777.889	2778.709	Fe II	P		60	2809.484	2810.312	Ne II	CP	
60	2778.067	2778.887	Fe I	P		10	2809.783	2810.611	Fe II	P	
600	2778.2205	2779.0405	Fe I	CA	$a^5F_5 - y^5G_5$	5	2810.262	2811.090	Fe I	P	
40	2778.841	2779.662	Fe I	P		1	2811.1624	2811.9904	Fe I	CA	$a^3F_3 - v^5F_3$
40	2779.299	2780.119	Fe II	P		12	2812.0422	2812.8704	Fe I	CA	$a^3G_4 - t^3F_4$
5	2779.907	2780.728	Fe II	P		3	2812.114	2812.943	Fe I	P	
15	2780.03	2780.85	Bl	P		2500	2813.2866	2814.1151	Fe I	CA	$a^5F_4 - y^5G_5$
15	2780.6975	2781.5181	Fe I	CA	$b^3F_4 - u^3F_4$	3	2814.691	2815.520	Ne I	P	
12	2780.8826	2781.7032	Fe I	CA	$a^5F_4 - z^5H_3$	3	2815.0144	2815.8434	Fe I	CA	$a^3P_2 - 10_3$
20	2781.8355	2782.6563	Fe I	CA	$a^5F_2 - w^5D_3$	20	2815.5075	2816.3365	Fe I	CA	$a^3F_2 - w^3G_3$
6	2782.053	2782.874	Fe I	P	$a^5P_2 - y^1F_3$	6	2817.088	2817.917	Fe II	P	
3	2783.5509	2784.3722	Fe I	CA	$a^3F_2 - w^3G_3$	20	2817.5036	2818.3331	Fe I	CA	$a^5F_3 - y^5G_2$
50	2783.691	2784.512	Fe II	P		5	2817.940	2818.770	Fe I	P	
5	2784.0087	2784.8300	Fe I	CA	$b^3F_3 - u^3F_3$	12	2819.3031	2820.1331	Fe I	CA	$a^3G_3 - t^3F_2$
8	2784.343	2785.164	Fe I	P	$a^3H_5 - x^1H_5$	3	2820.690	2821.521	Fe II	P	
3	2785.127	2785.949	Fe I	P		2	2820.8028	2821.6331	Fe I	CA	$a^5D_3 - z^5G_2$
30	2785.193	2786.015	Fe II	P		3	2822.058	2822.889	Fe II	P	
8	2785.275	2786.097	Fe I	P		300	2823.2760	2824.1069	Fe I	CA	$a^5F_3 - y^5G_3$
6	2786.781	2787.603	Fe I	P		3	2824.7001	2825.5314	Fe I	CA	$a^3G_3 - t^3F_3$
5	2786.944	2787.767	Fe I	P		600	2825.5557	2826.3874	Fe I	ED	$a^5F_3 - z^5H_4$
5	2787.241	2788.064	Fe II	P		50	2825.6874	2826.5190	Fe I	CA	$a^5D_4 - z^3G_5$
20	2787.9317	2788.7540	Fe I	CA	$a^3F_4 - x^3G_5$	1	2825.9945	2826.8261	Fe I	CA	$a^5D_2 - z^3G_3$
3000	2788.104	2788.926	Fe I	P	$a^5F_5 - y^5G_6$	8	2826.4973	2827.3291	Fe I	CA	$a^3F_3 - v^5F_4$
15	2789.477	2790.300	Fe I	P	$a^5P_3 - t^5P_3$	10	2827.589	2828.421	Ne I	P	
5	2789.678	2790.500	Fe II	P		12	2827.8919	2828.7240	Fe I	CA	$a^5D_3 - z^3G_4$
20	2789.8019	2790.6247	Fe I	CA	$a^3G_5 - t^3F_4$	6	2828.627	2829.459	Fe II	P	
6	2789.847	2790.670	Fe I	P		5	2828.678	2829.510	Fe II	P	
12	2791.454	2792.278	Fe I	P		120	2828.8082	2829.6405	Fe I	CA	$a^5F_2 - z^5H_3$
20	2791.7856	2792.6088	Fe I	CA	$a^3H_5 - v^3H_5$	6	2830.960	2831.793	Fe II	P	
100	2792.017	2792.840	Ne II	CP		6	2831.255	2832.088	Fe II	P	
30	2792.319	2793.142	Ne I	P		25	2831.561	2832.394	Fe II	P	
25	2792.3987	2793.2221	Fe I	CA	$a^3F_3 - w^3G_4$	1500	2832.4358	2833.2690	Fe I	CA	$a^5F_3 - y^5G_4$
3	2793.368	2794.192	Fe I	P		10	2833.085	2833.918	Fe II	P	
5	2793.787	2794.611	Fe I	P		30	2833.401	2834.235	Fe I	P	$a^3P_2 - y^1F_3$
20	2793.888	2794.712	Fe II	P		3	2833.408	2834.241	Fe I	P	
30	2793.928	2794.752	Fe II	P		3	2833.817	2834.650	Fe I	P	
60	2794.219	2795.043	Ne II	CP		6	2834.1728	2835.0064	Fe I	CA	$a^3F_3 - x^3G_3$
20	2794.7022	2795.5262	Fe I	CA	$a^5F_3 - w^5D_4$	1	2834.4133	2835.2470	Fe I	CA	$a^3F_2 - v^5F_2$
12	2795.0054	2795.8294	Fe I	CA	$a^5D_4 - z^3G_4$	1	2834.4194	2835.2530	Fe I	CA	$a^3F_3 - w^5G_2$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
10	2834.7535	2835.5873	Fe I	CA	$b^3F_4 - s^3G_5$	10	2869.230	2870.072		P	
15	2835.4565	2836.2905	Fe I	CA	$a^5D_4 - z^5G_4$	50	2869.3075	2870.1497	Fe I	CA	$a^5D_3 - z^5G_4$
5	2835.661	2836.495		P		5	2869.826	2870.668	Fe I	P	$z^7D_2 - g^7D_1$
12	2835.711	2836.545	Fe II	P		1	2871.273	2872.115		P	
120	2835.9497	2836.7838	Fe I	CA	$a^3F_3 - x^3G_4$	50	2872.3338	2873.1768	Fe I	CA	$a^5F_3 - x^5P_3$
5	2836.315	2837.149	Fe I	P	$z^7F_6 - h^7D_5$	10	2872.385	2873.228	Fe II	P	
200	2838.1193	2838.9539	Fe I	CA	$a^5F_2 - y^5G_2$	0	2872.4987	2873.3417	Fe I	CA	$b^3P_2 - t^3F_3$
6	2838.215	2839.050	Fe II	P		25	2872.666	2873.510	Ne I	P	
8	2838.448	2839.282		P		8	2873.6527	2874.4960	Fe I	CA	$b^3F_4 - v^3H_5$
30	2839.513	2840.348	Fe II	P		80	2874.1725	2875.0159	Fe I	CA	$a^5D_4 - z^5G_5$
20	2839.799	2840.634	Fe II	P		8	2874.8806	2875.7242	Fe I	CA	$z^7D_5 - g^7D_4$
6	2840.344	2841.179	Fe II	P		4	2875.246	2876.090		P	
12	2840.4220	2841.2572	Fe I	CA	$a^5D_3 - z^5G_3$	10	2875.3019	2876.1456	Fe I	CA	$a^3F_4 - u^5D_3$
15	2840.649	2841.484	Fe II	P		8	2875.348	2876.192	Fe II	P	
12	2840.758	2841.594	Fe II	P		4	2876.804	2877.648	Fe II	P	
4	2840.9367	2841.7720	Fe I	CA	$a^5P_2 - v^3P_2$	40	2877.3007	2878.1449	Fe I	CA	$a^3F_4 - u^5D_4$
2	2842.911	2843.747		P		4	2878.9516	2879.7962	Fe I	CA	$a^3F_2 - w^5G_3$
4	2843.213	2844.049		P		0	2879.4570	2880.3018	Fe I	CA	$a^3P_1 - t^5P_1$
200	2843.6307	2844.4666	Fe I	CA	$a^5F_4 - x^5P_3$	5	2880.5791	2881.4241	Fe I	CA	$a^5F_1 - x^5P_2$
0	2843.9202	2844.7563	Fe I	CA	$a^5D_2 - z^5G_2$	5	2880.757	2881.602	Fe II	P	
1000	2843.9766	2844.8126	Fe I	CA	$a^5F_2 - y^5G_3$	4	2880.831	2881.676	Fe II	P	
5	2844.957	2845.793	Fe II	P		12	2881.578	2882.423		P	
8	2845.425	2846.261	Fe II	P		6	2882.506	2883.351	Fe II	P	
3	2845.488	2846.325	Fe II	P		8	2883.711	2884.556	Fe II	P	
12	2845.5473	2846.3837	Fe I	CA	$a^3F_3 - w^5G_3$	8	2883.7475	2884.5933	Fe I	CA	$a^3G_5 - u^3H_5$
100	2845.5945	2846.4309	Fe I	CA	$a^5F_3 - x^5P_2$	5	2884.269	2885.115	Fe II	P	
12	2845.7137	2846.5502	Fe I	CA	$a^3F_4 - z^3H_4$	5	2884.765	2885.611	Fe II	P	
6	2846.8296	2847.6664	Fe I	CA	$a^3F_4 - x^3F_3$	2	2885.933	2886.779	Fe II	P	
8	2847.773	2848.610	Fe II	P		6	2886.3159	2887.1624	Fe I	CA	$a^3F_3 - x^3F_2$
4	2847.883	2848.720		P		2	2887.3580	2888.2048	Fe I	CA	$a^3H_6 - 12_5$
8	2848.052	2848.889	Fe II	P		15	2887.8048	2888.6516	Fe I	CA	$a^3G_5 - u^3H_6$
15	2848.106	2848.943	Fe II	P		1	2887.9565	2888.8033	Fe I	CA	$a^3H_5 - t^3G_4$
15	2848.320	2849.157	Fe II	P		4	2888.095	2888.942	Fe II	P	
40	2848.7139	2849.5511	Fe I	CA	$a^5F_2 - x^5P_1$	2	2889.864	2890.711		P	
4	2849.605	2850.443	Fe II	P		4	2889.9008	2890.7482	Fe I	CA	$a^3H_6 - t^3G_5$
5	2851.5094	2852.3473	Fe I	CA	$b^3F_2 - s^3G_3$	5	2889.9887	2890.8361	Fe I	CA	$z^7D_1 - g^7D_2$
12	2851.722	2852.560	Fe II	P		1	2890.8562	2891.7038	Fe I	CA	$a^3D_3 - q^3G_3$
800	2851.7968	2852.6347	Fe I	CA	$a^5F_1 - y^5G_2$	1	2891.4035	2892.2512	Fe I	CA	$a^3F_3 - w^3D_2$
3	2852.127	2852.965		P		3	2891.688	2892.535		P	
10	2852.606	2853.444		P		3	2891.7068	2892.5546	Fe I	CA	$b^3F_3 - v^3H_4$
1	2852.9653	2853.8035	Fe I	CA	$a^3F_4 - w^3D_3$	4	2891.905	2892.753	Fe I	P	$a^3H_4 - e^3X_3$
8	2853.6838	2854.5223	Fe I	CA	$a^3F_4 - z^3H_5$	6	2892.4779	2893.3259	Fe I	CA	$z^7D_4 - g^7D_4$
6	2853.7716	2854.6100	Fe I	CA	$b^3F_3 - s^3G_4$	8	2893.7627	2894.6110	Fe I	CA	$a^5F_2 - x^5P_3$
8	2855.689	2856.528	Fe II	P		8	2893.8807	2894.7290	Fe I	CA	$a^3F_3 - z^3H_4$
4	2856.147	2856.986	Fe II	P		50	2894.5038	2895.3523	Fe I	CA	$a^3P_2 - v^3P_2$
12	2856.377	2857.216	Fe II	P		3	2894.779	2895.627	Fe II	P	
30	2856.908	2857.747	Fe II	P		40	2895.0347	2895.8833	Fe I	CA	$a^3F_3 - x^3F_3$
5	2857.174	2858.014	Fe II	P		4	2895.220	2896.069	Fe II	P	
4	2857.810	2858.650		P		5	2897.266	2898.115	Fe II	P	
6	2857.99	2858.83	Bl	P		2	2897.637	2898.486	Fe I	P	$z^7D_2 - g^7D_3$
25	2858.340	2859.180	Fe II	P		8	2898.351	2899.200		P	
5	2858.629	2859.469	Fe II	P		1	2898.8573	2899.7068	Fe I	CA	$a^5P_2 - t^3D_3$
12	2858.8956	2859.7353	Fe I	CA	$a^5D_1 - z^5G_2$	2	2899.258	2900.107		P	
15	2862.4939	2863.3345	Fe I	CA	$a^5F_1 - x^5P_1$	25	2899.4152	2900.2649	Fe I	CA	$a^3P_2 - 8_1$
25	2863.4292	2864.2700	Fe I	CA	$a^3F_4 - x^3F_4$	15	2901.3802	2902.2303	Fe I	CA	$a^3F_3 - w^3D_3$
15	2863.8635	2864.7044	Fe I	CA	$a^5D_2 - z^5G_3$	25	2901.910	2902.761	Fe I	P	$z^7D_5 - g^7D_5$
5	2866.201	2867.043	Fe II	P		2	2904.087	2904.938		P	
30	2866.6249	2867.4665	Fe I	CA	$a^5F_2 - x^5P_2$	5	2904.160	2905.011		P	
12	2866.719	2867.561		P		2	2905.744	2906.595	Fe II	P	
15	2867.3091	2868.1508	Fe I	CA	$a^3F_2 - x^3G_3$	5	2906.416	2907.267		P	
10	2867.5614	2868.4032	Fe I	CA	$a^3F_2 - w^5G_2$	20	2907.5170	2908.3687	Fe I	CA	$a^3G_4 - u^3H_5$
4	2867.8788	2868.7207	Fe I	CA	$a^3F_3 - 1_2$	8	2908.8561	2909.7081	Fe I	CA	$z^7D_3 - g^7D_4$
8	2868.2140	2869.0559	Fe I	CA	$z^7D_3 - g^7D_2$	2	2909.3157	2910.1678	Fe I	CA	$a^3H_5 - t^3G_5$
6	2868.4534	2869.2955	Fe I	CA	$a^3P_2 - z^1P_1$	5	2909.499	2910.351		P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
6	2910.061	2910.913	Ne II	CP		6	2956.704	2957.568	Fe I	P	$a^5P_3 - t^5D_3$
6	2910.408	2911.260		P		3	2956.858	2957.722	Fe I	P	$a^3G_5 - x^1H_5$
3	2910.9260	2911.7785	Fe I	CA	$a^3G_3 - u^3F_4$	250	2957.3644	2958.2284	Fe I	CA	$a^5D_1 - y^5F_1$
120	2912.1574	2913.0103	Fe I	CA	$a^5D_4 - y^5F_3$	6	2957.4863	2958.3503	Fe I	CA	$a^3P_2 - t^3D_1$
1	2912.2566	2913.1095	Fe I	CA	$a^3F_3 - u^5D_2$	5	2959.329	2960.193		P	
60	2913.174	2914.027	Ne I	P		3	2959.602	2960.467	Fe II	P	
3	2914.197	2915.050		P		15	2959.683	2960.547	Fe I	P	$z^7F_6 - l^5$
6	2914.3038	2915.1572	Fe I	CA	$a^3F_2 - w^3D_1$	4	2959.838	2960.702	Fe II	P	
40	2918.024	2918.878	Fe I	P	$b^3H_6 - t^3H_6$	80	2959.9912	2960.8559	Fe I	ED	$a^3G_5 - v^3H_6$
10	2918.3525	2919.2068	Fe I	CA	$a^3P_1 - v^3P_1$	6	2960.2961	2961.1608	Fe I	CA	$a^3P_0 - v^3P_1$
3	2918.528	2919.383	Fe II	P		3	2960.554	2961.419		P	
4	2918.816	2919.671		P		3	2960.6602	2961.5251	Fe I	CA	$b^3G_5 - t^3F_4$
4	2919.214	2920.069		P		1	2962.1080	2962.9732	Fe I	CA	$a^3F_4 - x^5G_5$
8	2919.840	2920.695	Fe I	P	$z^7D_4 - g^7D_5$	15	2963.237	2964.103	Ne II	CP	
4	2919.6900	2921.5449	Fe I	CA	$a^3F_2 - x^3F_2$	6	2963.868	2964.733	Fe II	P	
4	2920.981	2921.837		P		1	2964.140	2965.000	Bl	P	
2	2922.211	2923.067		P		8	2965.035	2965.901	Fe II	P	
6	2922.623	2923.479	Fe I	P	$a^5P_3 - 7^2$	150	2965.2544	2966.1204	Fe I	CA	$a^5D_0 - y^5F_1$
5	2923.164	2924.020		P		15	2965.806	2966.672	Fe I	P	$a^3H_5 - 9^4$
20	2923.286	2924.142	Fe I	P	$b^3H_5 - t^3H_5$	25	2966.264	2967.131	Fe I	P	$a^5P_1 - t^5D_2$
12	2923.430	2924.286		P		1500	2966.8982	2967.7646	Fe I	CA	$a^5D_4 - y^5F_5$
30	2923.8528	2924.7085	Fe I	CA	$a^3G_5 - s^3G_5$	3	2968.4774	2969.3442	Fe I	CA	$a^3P_1 - z^1P_1$
12	2925.3578	2926.2139	Fe I	CA	$a^3G_3 - u^3H_4$	120	2969.360	2970.227	Fe I	P	$a^5D_1 - z^3P_0$
3	2925.618	2926.474	Ne II	CP		50	2969.4743	2970.3414	Fe I	CA	$a^5F_5 - x^5F_4$
10	2925.785	2926.641		P		800	2970.0995	2970.9667	Fe I	CA	$a^5D_1 - y^5F_2$
10	2925.8996	2926.7558	Fe I	CA	$a^3F_2 - w^3D_2$	800	2970.1181	2970.9853	Fe I	CA	$a^5D_2 - z^3P_1$
2	2926.553	2927.410		P		15	2970.517	2971.384	Fe II	P	
10	2926.586	2927.443	Fe II	P		50	2972.280	2973.147	Fe I	P	$a^5P_2 - t^5D_3$
4	2926.614	2927.471		P		1200	2973.1322	2974.0002	Fe I	CA	$a^5D_2 - y^5F_3$
3	2928.103	2928.960	Fe I	P	$a^5P_3 - u^5P_3$	500	2973.2352	2974.1032	Fe I	CA	$a^5D_3 - y^5F_4$
3	2928.7507	2929.6076	Fe I	CA	$a^3P_2 - u^3D_1$	150	2974.722	2975.590	Ne I	P	
120	2929.0072	2929.8642	Fe I	CA	$a^5D_3 - y^5F_2$	0	2974.780	2975.649	Fe I	P	$z^7F_5 - 2^4$
15	2929.109	2929.966	Fe I	P	$b^3H_4 - t^3H_4$	12	2976.1282	2976.9969	Fe I	CA	$a^3P_2 - u^3D_3$
4	2929.239	2930.096		P		3	2976.4970	2977.3658	Fe I	CA	$a^3F_4 - y^3G_3$
6	2929.6180	2930.4751	Fe I	CA	$a^3F_2 - x^3F_3$	2	2976.909	2977.778	Fe I	P	$z^7F_5 - l^5$
2	2931.4121	2932.2697	Fe I	CA	$a^3H_4 - 10^3$	6	2979.355	2980.225	Fe II	P	
3	2931.8052	2932.6629	Fe I	CA	$a^3G_4 - s^3G_3$	3	2979.812	2980.681	Ne I	P	
10	2932.727	2933.584	Ne I	P		12	2980.5341	2981.4039	Fe I	CA	$a^3G_3 - w^1F_3$
2	2934.371	2935.229	Fe I	P	$a^5P_3 - u^5F_3$	20	2980.649	2981.518	Ne I	P	
2	2935.883	2936.742	Fe II	P		25	2980.93	2981.80	Bl	P	
5	2936.068	2936.927	Fe II	P		600	2981.4451	2982.3151	Fe I	CA	$a^5D_3 - z^3P_2$
8	2936.1161	2936.9748	Fe I	CA	$a^3F_2 - w^3D_3$	25	2981.852	2982.722	Fe I	P	$a^5P_3 - t^5D_4$
4	2936.438	2937.297		P		2	2982.2288	2983.0990	Fe I	CA	$b^3G_4 - t^3F_3$
1200	2936.9034	2937.7623	Fe I	CA	$a^5D_4 - y^5F_4$	120	2982.672	2983.542	Ne I	P	
40	2937.807	2938.666	Fe I	P	$a^5P_2 - 7^2$	1000	2983.5698	2984.4403	Fe I	CA	$a^5D_4 - y^5D_3$
4	2939.071	2939.931	Fe I	P	$a^5P_1 - t^5D_0$	5	2984.559	2985.430		P	
3	2940.114	2940.974	Fe II	P		60	2984.767	2985.638	Fe I	P	$a^5F_5 - y^7P_4$
10	2940.589	2941.449	Fe I	P	$z^7F_5 - 3^4$	50	2984.824	2985.695	Fe II	P	
60	2941.3426	2942.2027	Fe I	CA	$a^5D_2 - y^5F_1$	3	2984.960	2985.831		P	
2	2943.574	2944.434		P		15	2986.4557	2987.3270	Fe I	CA	$a^5D_1 - z^3P_1$
12	2944.397	2945.257	Fe II	P		4	2986.650	2987.530	Bl	P	
10	2945.052	2945.913	Fe I	P	$a^3H_4 - b^X_3$	30	2987.2902	2988.1617	Fe I	CA	$a^5F_4 - x^5F_3$
60	2947.303	2948.164	Ne I	P		3	2988.113	2988.985		P	
6	2947.3631	2948.2246	Fe I	CA	$a^3P_2 - u^3D_2$	8	2988.4716	2989.3434	Fe I	CA	$a^3F_4 - y^3G_4$
1000	2947.8759	2948.7376	Fe I	CA	$a^5D_3 - y^5F_3$	4	2988.882	2989.754		P	
40	2948.4329	2949.2947	Fe I	CA	$a^3G_4 - s^3G_4$	40	2990.3913	2991.2635	Fe I	CA	$a^3G_4 - v^3H_5$
3	2948.727	2949.589	Fe I	P	$a^5P_2 - t^5D_2$	3	2991.632	2992.504	Fe I	P	
3	2948.952	2949.813		P		15	2991.762	2992.635		P	
60	2950.243	2951.105	Fe I	P	$a^5P_3 - 5^3$	60	2992.432	2993.304	Ne I	P	
25	2953.4862	2954.3493	Fe I	CA	$a^3G_3 - s^3G_3$	5	2993.181	2994.054		P	
2	2953.539	2954.402		P		6	2993.793	2994.666		P	
600	2953.9399	2954.8031	Fe I	CA	$a^5D_2 - y^5F_2$	1000	2994.4269	2995.3002	Fe I	CA	$a^5D_3 - y^5D_2$
12	2954.6522	2955.5155	Fe I	CA	$a^3P_2 - t^3D_3$	250	2994.5019	2995.3751	Fe I	CA	$a^5D_0 - z^3P_1$
100	2955.725	2956.589	Ne II	CP		5	2995.676	2996.549		P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
10	2996.3850	2997.2587	Fe I	CA	$a^3P_1 - v^3P_2$	30	3026.4614	3027.3426	Fe I	CA	$a^5F_2 - x^5F_2$
3	2997.216	2998.089	Fe II	P		30	3027.016	3027.897	Ne II	CP	
4	2997.302	2998.176		P		6	3028.700	3029.582		P	
5	2998.265	2999.139		P		30	3028.863	3029.745	Ne II	CP	
8	2999.191	3000.066		P		8	3029.2337	3030.1156	Fe I	CA	$a^3F_3 - y^3G_3$
500	2999.5118	3000.3863	Fe I	CA	$a^5F_5 - x^5F_5$	80	3030.1484	3031.0306	Fe I	CA	$a^3H_5 - w^3H_5$
10	2999.699	3000.573		P		4	3030.322	3031.204	Ne I	P	
120	3000.4508	3001.3255	Fe I	CA	$a^3F_4 - y^3G_5$	4	3030.6033	3031.4856	Fe I	CA	$a^3P_2 - v^3F_3$
800	3000.9477	3001.8226	Fe I	CA	$a^5D_2 - y^5D_1$	10	3030.787	3031.669	Fe I	P	$b^3G_4 - x^3I_5$
60	3001.6554	3002.5304	Fe I	CA	$c^3P_2 - t^3F_3$	60	3031.2144	3032.0969	Fe I	CA	$a^3H_4 - w^3H_4$
6	3002.199	3003.074	Fe II	P		5	3031.324	3032.206		P	
15	3002.645	3003.521	Fe II	P		25	3031.6336	3032.5161	Fe I	CA	$a^5F_1 - x^5F_1$
25	3003.0302	3003.9055	Fe I	CA	$a^5F_3 - x^5F_2$	3	3031.718	3032.600		P	
4	3003.863	3004.739		P		5	3033.1002	3033.9831	Fe I	CA	$a^3P_1 - u^3D_1$
6	3004.1157	3004.9913	Fe I	CA	$a^3H_5 - y^3I_5$	5	3033.395	3034.278		P	
3	3004.630	3005.505	Fe I	P	$a^3F_3 - x^5G_4$	60	3034.462	3035.345	Ne II	CP	
8	3005.305	3006.181	Fe I	P	$a^3H_6 - y^3I_7$	60	3034.4842	3035.3675	Fe I	CA	$a^3F_2 - x^5G_3$
4	3006.448	3007.324		P		5	3035.737	3036.621		P	
5	3006.543	3007.419		P		30	3035.922	3036.805	Ne II	CP	
40	3007.1452	3008.0216	Fe I	CA	$a^3F_4 - x^3D_3$	5	3036.123	3037.007		P	
200	3007.2823	3008.1588	Fe I	CA	$a^5D_2 - z^3P_2$	40	3036.964	3037.848	Fe II	P	
500	3008.1390	3009.0157	Fe I	SM	$a^5D_1 - y^5D_0$	800	3037.3887	3038.2726	Fe I	CA	$a^5D_1 - y^5D_2$
10	3009.0933	3009.9702	Fe I	CA	$a^3H_6 - w^3H_5$	50	3037.7793	3038.6633	Fe I	CA	$a^5F_2 - z^5S_2$
120	3009.5689	3010.4460	Fe I	CA	$a^5F_4 - x^5F_4$	5	3038.314	3039.198	Fe I	P	
4	3010.174	3011.051	Fe II	P		4	3038.653	3039.537		P	
50	3011.4817	3012.3592	Fe I	CA	$a^3G_3 - v^3H_4$	4	3039.3182	3040.2027	Fe I	CA	$a^3H_5 - y^3I_6$
25	3012.137	3013.015	Ne I	P		10	3039.585	3040.470	Ne II	CP	
5	3012.443	3013.320		P		50	3040.4271	3041.3119	Fe I	CA	$a^5F_4 - x^5F_5$
30	3012.959	3013.837	Ne I	P		4	3040.962	3041.847		P	
3	3014.1057	3014.9839	Fe I	CA	$b^3G_5 - v^1G_4$	80	3041.6372	3042.5222	Fe I	CA	$a^3F_3 - y^3G_4$
4	3014.1732	3015.0514	Fe I	CA	$a^5F_3 - z^5S_2$	50	3041.7384	3042.6234	Fe I	CA	$a^5F_3 - x^5F_4$
6	3015.9205	3016.7991	Fe I	CA	$a^3H_5 - w^3H_4$	15	3042.0192	3042.9043	Fe I	CA	$a^5F_1 - x^5F_2$
12	3016.1815	3017.0602	Fe I	CA	$a^5F_2 - x^5F_1$	25	3042.6644	3043.5497	Fe I	CA	$a^5F_2 - x^5F_3$
3	3017.259	3018.138		P		4	3042.843	3043.728		P	
40	3017.310	3018.189	Ne II	CP		3	3044.088	3044.974	Ne II	CP	
80	3017.356	3018.235	Ne I	P		3	3044.323	3045.208		P	
4	3017.418	3018.297		P		40	3045.0783	3045.9642	Fe I	CA	$a^5F_4 - y^7P_3$
60	3017.6272	3018.5062	Fe I	CA	$a^5D_1 - y^5D_1$	3	3045.503	3046.389		P	
5	3017.856	3018.735		P		4	3045.556	3046.442	Ne II	CP	
4	3018.047	3018.926		P		12	3045.5874	3046.4734	Fe I	CA	$a^3H_4 - w^3H_5$
5	3018.1359	3019.0151	Fe I	CA	$a^3H_6 - y^3I_6$	5	3046.337	3047.223		P	
60	3018.9826	3019.8620	Fe I	CA	$a^5F_3 - x^5F_3$	8	3046.9265	3047.8129	Fe I	CA	$a^3H_5 - w^3H_6$
25	3019.234	3020.113		P		15	3047.0498	3047.9362	Fe I	CA	$b^3G_5 - u^3F_4$
4	3019.2898	3020.1693	Fe I	CA	$a^3H_4 - y^3I_5$	800	3047.6043	3048.4909	Fe I	CA	$a^5D_2 - y^5D_3$
20	3019.381	3020.261		P		6	3048.452	3049.339		P	
5	3019.652	3020.532		P		5	3048.876	3049.763		P	
30	3019.804	3020.684		P		4	3048.994	3049.881	Fe II	P	
60	3020.009	3020.889	Fe II	P		3	3049.354	3050.241	Fe I	P	
500	3020.4907	3021.3704	Fe I	CA	$a^5D_2 - y^5D_2$	4	3050.473	3051.360	Ne II	CP	
1500	3020.6391	3021.5189	Fe I	CA	$a^5D_4 - y^5D_4$	10	3053.0670	3053.9549	Fe I	CA	$a^3P_1 - u^3D_2$
600	3021.0727	3021.9526	Fe I	CA	$a^5D_3 - y^5D_3$	8	3053.429	3054.317	Fe I	P	
50	3021.331	3022.211		P		6	3053.455	3054.343		P	
25	3021.749	3022.629		P		3	3053.538	3054.426		P	
6	3022.330	3023.211		P		3	3053.878	3054.766		P	
4	3022.773	3023.654		P		5	3054.346	3055.234		P	
5	3023.192	3024.072		P		10	3054.675	3055.564	Ne II	CP	
500	3024.0325	3024.9131	Fe I	CA	$a^5D_1 - z^3P_2$	50	3055.2620	3056.1505	Fe I	CA	$a^3F_3 - x^3D_2$
10	3024.283	3025.164		P		4	3055.294	3056.182		P	
3	3024.582	3025.463		P		5	3055.351	3056.240	Fe II	P	
5	3024.798	3025.679		P		4	3055.710	3056.599		P	
5	3024.871	3025.752		P		4	3056.173	3057.061		P	
15	3025.280	3026.161	Fe I	P	$a^5F_4 - y^7P_4$	8	3056.242	3057.130	Fe I	P	$b^3F_2 - a^3X_2$
150	3025.6384	3026.5194	Fe I	CA	$a^3H_6 - w^3H_6$	600	3057.4456	3058.3346	Fe I	CA	$a^5F_5 - x^5D_4$
500	3025.8425	3026.7235	Fe I	CA	$a^5D_0 - y^5D_1$	6	3057.789	3058.678		P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
5	3057.812	3058.701		P		10	3092.901	3093.799	Ne II	CP	
8	3058.034	3058.924		P		6	3093.355	3094.253		P	
5	3058.364	3059.253		P		8	3093.8044	3094.7025	Fe I	CA	$a^3F_2 - x^3D_2$
20	3058.493	3059.383		P		30	3093.878	3094.776	Fe I	P	$b^3F_4 - s^3D_3$
1000	3059.0856	3059.9750	Fe I	CA	$a^5D_3 - y^5D_4$	5	3094.006	3094.904	Ne II	CP	
5	3060.359	3061.249		P		10	3094.900	3095.798		P	
5	3060.5375	3061.4272	Fe I	CA	$b^3G_4 - u^3F_3$	6	3095.2668	3096.1652	Fe I	CA	$a^3G_5 - 12_5$
4	3060.621	3061.511		P		12	3097.133	3098.032	Ne II	CP	
4	3060.777	3061.667		P		6	3097.775	3098.674		P	
5	3060.9832	3061.8731	Fe I	CA	$a^3F_3 - x^3D_3$	5	3097.884	3098.783		P	
3	3062.491	3063.382		P		80	3098.1891	3099.0883	Fe I	CA	$a^3G_5 - t^3G_5$
5	3063.301	3064.192		P		100	3099.8951	3100.7947	Fe I	CA	$a^5F_1 - x^5D_1$
5	3063.696	3064.587	Ne I	P		100	3099.9679	3100.8675	Fe I	CA	$a^5F_4 - x^5D_4$
5	3063.9306	3064.8212	Fe I	CA	$a^3P_1 - t^3D_1$	60	3100.3031	3101.2028	Fe I	CA	$a^5F_2 - x^5D_2$
4	3064.018	3064.909		P		100	3100.6651	3101.5649	Fe I	CA	$a^5F_3 - x^5D_3$
4	3065.316	3066.207	Fe II	P		10	3100.8363	3101.7361	Fe I	CA	$a^3H_6 - 6_5$
6	3066.4786	3067.3699	Fe I	CA	$a^3G_4 - t^3G_3$	0	3101.0017	3101.9016	Fe I	CA	$a^3G_4 - t^3G_4$
4	3066.999	3067.891		P		5	3102.637	3103.537	Fe I	P	
30	3067.1182	3068.0096	Fe I	CA	$a^3F_2 - y^3G_3$	4	3106.5383	3107.4396	Fe I	CA	$a^3H_4 - u^3D_3$
250	3067.2441	3068.1355	Fe I	CA	$a^5F_4 - x^5D_3$	5	3109.0376	3109.9395	Fe I	CA	$z^7D_2 - e^5P_2$
5	3067.9482	3068.8398	Fe I	CA	$a^3G_5 - 13_4$	6	3111.6847	3112.5873	Fe I	CA	$b^3F_4 - w^3H_4$
25	3068.1732	3069.0649	Fe I	CA	$a^3F_2 - x^3D_1$	4	3112.0775	3112.9802	Fe I	CA	$b^3G_5 - s^3G_5$
3	3068.724	3069.616	Fe II	P		4	3116.251	3117.155	Fe I	P	$z^7D_3 - e^5P_3$
4	3069.330	3070.222		P		5	3116.510	3117.410	Bl	P	
3	3069.443	3070.335		P		8	3116.6313	3117.5352	Fe I	CA	$a^5F_1 - x^5D_2$
3	3070.884	3071.776		P		5	3117.6395	3118.5436	Fe I	CA	$a^5F_2 - y^7P_2$
6	3071.087	3071.980	Ne II	CP		20	3119.4944	3120.3989	Fe I	CA	$a^3H_5 - u^3G_4$
5	3071.124	3072.017	Fe II	P		15	3120.4346	3121.3394	Fe I	CA	$a^3H_4 - u^3G_3$
5	3071.530	3072.422		P		5	3121.7563	3122.6614	Fe I	CA	$a^5P_1 - w^3P_0$
3	3072.045	3072.938		P		3	3122.6674	3123.5728	Fe I	CA	$a^3G_4 - 12_5$
4	3072.290	3073.182		P		4	3123.3481	3124.2536	Fe I	CA	$z^7D_4 - e^7S_3$
3	3072.651	3073.544	Ne II	P		3	3124.096	3125.002	Fe I	P	$z^7D_1 - e^5P_1$
3	3073.233	3074.126	Fe I	P	$a^1G_4 - x^3I_5$	40	3125.6509	3126.5570	Fe I	CA	$a^5F_2 - x^5D_3$
4	3073.9783	3074.8714	Fe I	CA	$a^3G_5 - t^3G_4$	40	3125.6555	3126.5616	Fe I	CA	$z^7D_5 - e^7G_4$
5	3074.1473	3075.0404	Fe I	CA	$b^3G_3 - u^3F_2$	40	3126.18	3127.09	Bl	P	
5	3074.437	3075.330		P		100	3126.1986	3127.1051	Ne I	BA	
120	3075.7193	3076.6128	Fe I	CA	$a^5F_3 - x^5D_2$	5	3128.8977	3129.8046	Fe I	CA	$a^3F_3 - y^5S_2$
4	3075.950	3076.843		P		5	3129.3331	3130.2402	Fe I	CA	$a^5F_4 - w^5D_3$
5	3076.357	3077.250		P		5	3132.5178	3133.4256	Fe I	CA	$z^5D_4 - i^5D_3$
3	3076.435	3077.329	Fe II	P		10	3134.1097	3135.0179	Fe I	CA	$a^5F_3 - x^5D_4$
20	3076.976	3077.870	Ne I	P		5	3135.8596	3136.7683	Fe I	CA	$a^3H_4 - u^3G_4$
4	3077.170	3078.064	Fe II	P		5	3139.6579	3140.5675	Fe I	CA	$z^7D_5 - e^7F_4$
4	3077.636	3078.530		P		6	3140.3903	3141.3001	Fe I	CA	$z^5D_3 - i^5D_2$
15	3078.0155	3078.9096	Fe I	CA	$a^5F_3 - y^7P_3$	30	3141.331	3142.242	Ne II	CP	
3	3078.259	3079.153		P		8	3142.4536	3143.3639	Fe I	CA	$z^7D_3 - e^7S_3$
6	3078.4324	3079.3267	Fe I	CA	$a^3P_0 - u^3D_1$	10	3142.8885	3143.7990	Fe I	CA	$a^3P_2 - w^3P_2$
3	3078.588	3079.482		P		10	3143.2425	3144.1531	Fe I	CA	$a^5D_4 - z^3F_3$
5	3078.681	3079.575	Fe II	P		6	3143.720	3144.631	Ne II	CP	
4	3078.878	3079.772	Ne I	P		15	3143.990	3144.901	Fe I	P	$z^5D_4 - i^5D_4$
4	3079.181	3080.075	Ne I	P		6	3144.4837	3145.3946	Fe I	CA	$z^7D_2 - f^5F_2$
1	3079.990	3080.885		P		5	3145.0565	3145.9675	Fe I	CA	$b^3G_4 - s^3G_4$
4	3080.110	3081.005		P		0	3146.4676	3147.3790	Fe I	CA	$z^7D_4 - e^7G_4$
4	3081.002	3081.897		P		4	3147.291	3148.202		P	
3	3081.342	3082.237		P		5	3147.603	3148.515		P	
3	3081.734	3082.629		P		4	3147.7954	3148.7070	Fe I	CA	$b^3G_3 - s^3G_3$
3	3082.153	3083.048		P		4	3148.4064	3149.3182	Fe I	CA	$a^3H_5 - u^3G_5$
50	3083.7413	3084.6368	Fe I	CA	$a^5F_2 - x^5D_1$	6	3148.6107	3149.5229	Ne I	BA	
4	3084.461	3085.357		P		4	3150.3073	3151.2196	Fe I	CA	$z^5D_1 - 4_2$
3	3085.573	3086.469		P		20	3151.352	3152.264	Fe I	P	$a^3G_4 - y^1H_5$
20	3088.665	3089.562		P		6	3151.8658	3152.7786	Fe I	CA	$a^5D_3 - z^3F_2$
2	3090.2051	3091.1023	Fe I	CA	$a^3G_3 - t^3G_3$	4	3153.0502	3153.9632	Fe I	CA	$a^5P_2 - w^3F_2$
120	3091.5769	3092.4745	Fe I	CA	$a^5F_1 - x^5D_0$	10	3153.1994	3154.1125	Fe I	CA	$z^7D_3 - f^5F_4$
10	3092.710	3093.608		P		4	3153.3144	3154.2275	Fe I	CA	$z^7D_3 - e^7G_3$
10	3092.7811	3093.6789	Fe I	CA	$a^5F_3 - y^7P_2$	6	3153.4107	3154.3241	Ne I	BA	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
4	3153.751	3154.665		P		5	3183.450	3184.371		P	
6	3154.201	3155.115	Fe II	P		3	3183.578	3184.499		P	
6	3154.4155	3155.3288	Fe I	CA	$a^5P_3 - v^3D_2$	5	3184.6216	3185.5426	Fe I	CA	$z^7D_3 - e^7F_3$
3	3154.4960	3155.4094	Fe I	CA	$z^7D_2 - f^5F_3$	150	3184.8947	3185.8157	Fe I	CA	$a^5D_3 - z^3F_3$
3	3154.993	3155.906	Ne II	P		4	3186.741	3187.662	Fe II	P	
3	3155.1169	3156.0304	Fe I	CA	$z^7D_1 - f^5F_2$	10	3188.5681	3189.4901	Fe I	CA	$z^7D_5 - e^5G_5$
6	3155.2936	3156.2072	Fe I	CA	$a^3H_5 - v^3F_4$	10	3188.741	3189.663	Ne II	CP	
4	3155.796	3156.710		P		15	3188.820	3189.742	Fe I	P	
10	3156.2734	3157.1872	Fe I	CA	$z^5D_3 - i^5D_3$	1	3190.0162	3190.9385	Fe I	CA	$b^3F_3 - i^3D_3$
4	3156.4631	3157.3770	Fe I	CA	$b^3G_4 - w^1F_3$	3	3190.6496	3191.5721	Fe I	CA	$a^1G_4 - s^3G_5$
20	3157.0358	3157.9498	Fe I	CA	$z^7D_4 - e^7G_5$	5	3190.8159	3191.7385	Fe I	CA	$a^1G_4 - s^3G_4$
4	3157.143	3158.057		P		6	3190.865	3191.787	Ne II	CP	
12	3157.8858	3158.8000	Fe I	CA	$z^7D_2 - e^7S_3$	1	3191.1131	3192.0357	Fe I	CA	$b^3F_4 - u^3D_3$
3	3157.9869	3158.9012	Fe I	CA	$z^7D_4 - e^5G_3$	250	3191.6591	3192.5819	Fe I	CA	$a^5D_4 - z^3D_3$
4	3158.183	3159.097	Fe I	P		5	3192.4127	3193.3356	Fe I	CA	$a^5P_1 - v^3D_2$
6	3160.1971	3161.1119	Fe I	CA	$z^5D_2 - i^5D_2$	6	3192.507	3193.430	Fe I	P	
20	3160.3420	3161.2568	Fe I	CA	$a^3H_6 - x^3H_6$	5	3192.563	3193.486		P	
25	3160.6575	3161.5725	Fe I	CA	$z^7D_4 - e^7F_4$	6	3192.8009	3193.7239	Fe I	CA	$z^7D_1 - e^7F_2$
5	3161.3712	3162.2863	Fe I	CA	$a^3F_3 - w^5D_2$	6	3192.8426	3193.7656	Fe I	CA	$b^3G_4 - v^3H_5$
12	3161.9467	3162.8620	Fe I	CA	$z^7D_5 - e^7G_6$	500	3193.2258	3194.1490	Fe I	CA	$a^5D_4 - z^3F_4$
5	3162.3305	3163.2458	Fe I	CA	$z^7D_3 - e^5G_2$	800	3193.2992	3194.2224	Fe I	CA	$z^7D_2 - e^5G_3$
6	3163.871	3164.787		P		4	3193.893	3194.817	Fe II	P	
5	3164.275	3165.191		P		6	3194.4244	3195.3478	Fe I	CA	$z^7D_2 - e^7F_1$
4	3164.2963	3165.2122	Fe I	CA	$z^7D_3 - g^5D_4$	12	3194.577	3195.501	Ne II	CP	
5	3164.429	3165.345	Ne II	CP		12	3196.076	3196.999	Fe II	P	
15	3164.6628	3165.5787		P		5	3196.1223	3197.0461	Fe I	CA	$z^7F_5 - g^7D_4$
5	3164.9992	3165.9152	Fe I	CA	$z^7D_4 - e^5S_2$	200	3196.9281	3197.8522	Fe I	CA	$z^7D_4 - e^7F_5$
5	3165.0016	3165.9176	Fe I	CA	$z^7D_4 - e^7F_3$	50	3196.9869	3197.9110	Fe I	CA	$a^5D_3 - z^3D_2$
5	3165.649	3166.566	Ne II	CP		5	3197.520	3198.444	Fe I	P	$z^5F_2 - g^5G_2$
6	3165.8578	3166.7740	Fe I	CA	$z^7D_3 - e^7G_4$	50	3198.587	3199.511	Ne II	CP	
3	3165.936	3166.853	Fe II	P		80	3199.4996	3200.4243	Fe I	CA	$a^5D_1 - z^3F_2$
15	3166.4353	3167.3517	Fe I	CA	$b^3F_4 - i^3D_3$	80	3199.5309	3200.4556	Fe I	CA	$z^7D_4 - f^7D_4$
4	3167.5762	3168.4931	Ne I	BA		4	3200.317	3201.242		P	
6	3167.857	3168.774	Fe II	P		60	3200.471	3201.396	Fe I	P	
6	3167.923	3168.840	Fe I	P	$z^5D_3 - i^5D_4$	12	3200.7847	3201.7097	Fe I	CA	$a^5D_2 - z^3D_1$
3	3168.462	3169.379		P		6	3202.5575	3203.4830	Fe I	CA	$a^1G_4 - w^1F_3$
3	3168.600	3169.517		P		3	3202.862	3203.787		P	
3	3168.8538	3169.7708	Fe I	CA	$z^7D_2 - e^7G_3$	50	3205.3985	3206.3248	Fe I	CA	$z^7D_1 - e^7F_1$
10	3171.3429	3172.2606	Fe I	CA	$a^3F_4 - w^5D_4$	5	3207.0749	3208.0016	Fe I	CA	$z^7D_5 - e^5G_6$
10	3171.3513	3172.2689	Fe I	CA	$a^1G_4 - s^3G_3$	8	3208.470	3209.397	Fe I	P	$z^5F_1 - g^5G_2$
3	3171.6633	3172.5810	Fe I	CA	$z^7D_1 - e^7G_2$	6	3208.965	3209.892	Ne II	CP	
5	3172.0838	3173.0016	Fe I	CA	$a^5P_2 - w^3F_3$	40	3209.298	3210.225	Fe I	P	$z^7F_6 - g^7D_5$
4	3173.410	3174.329	Fe I	P	$z^7F_1 - g^7D_1$	10	3209.356	3210.283	Ne II	CP	
6	3173.6078	3174.5260	Fe I	CA	$z^7F_3 - g^7D_2$	30	3210.2293	3211.1568	Fe I	CA	$z^7D_4 - e^5G_5$
8	3173.690	3174.608	Fe I	P	$a^5P_2 - 3_3$	40	3210.8280	3211.7556	Fe I	CA	$z^7D_2 - f^7D_1$
5	3175.314	3176.233	Fe I	P	$a^3G_3 - c^3X_3$	12	3211.4851	3212.4129	Fe I	CA	$z^7D_1 - e^5S_2$
80	3175.4454	3176.3641	Fe I	CA	$z^7D_5 - e^7F_5$	5	3211.608	3212.536		P	
4	3176.3612	3177.2801	Fe I	CA	$b^3F_2 - u^3D_1$	50	3211.675	3212.603	Fe I	P	$z^5F_5 - g^5G_6$
5	3177.536	3178.455	Fe II	P		100	3211.876	3212.804	Fe I	P	$a^5P_1 - 2_2$
20	3177.9590	3178.8783	Fe I	CA	$z^7D_2 - e^5G_2$	6	3211.9859	3212.9138	Fe I	CA	$z^7D_5 - e^7P_4$
20	3178.0133	3178.9326	Fe I	CA	$z^7D_5 - f^7D_4$	4	3212.161	3213.089		P	
3	3178.312	3179.231		P		6	3213.310	3214.239	Fe II	P	
4	3178.5375	3179.4569	Fe I	CA	$b^3G_3 - w^1F_3$	40	3213.735	3214.664	Fe I	P	$b^3G_3 - v^3H_4$
15	3178.9627	3179.8823	Fe I	CA	$a^3H_5 - x^3H_5$	200	3214.0111	3214.9395	Fe I	CA	$z^7D_3 - f^7D_3$
6	3179.53	3180.45	Bl	P		30	3214.328	3215.256	Ne II	CP	
50	3180.2236	3181.1434	Fe I	CA	$z^7D_3 - e^7F_4$	200	3214.3956	3215.3241	Fe I	CA	$a^5D_2 - z^3F_3$
50	3180.2236	3181.1434	Fe I	CA	$z^7D_3 - e^7F_4$	5	3215.411	3216.340		P	
50	3180.7554	3181.6754	Fe I	CA	$a^5D_2 - z^3F_2$	60	3215.9380	3216.8669	Fe I	CA	$z^7D_2 - f^7D_2$
8	3181.5213	3182.4415	Fe I	CA	$b^3F_3 - u^3D_2$	50	3217.3770	3218.3063	Fe I	CA	$z^7D_5 - f^5D_4$
5	3181.8463	3182.7666	Fe I	CA	$z^7F_2 - g^7D_2$	80	3219.5827	3220.5125	Fe I	CA	$z^7D_3 - f^7D_4$
5	3181.9126	3182.8329	Fe I	CA	$z^7D_2 - e^7F_2$	60	3219.7664	3220.6962	Fe I	CA	$a^5D_1 - z^3D_1$
6	3181.974	3182.894		P		60	3219.8044	3220.7343	Fe I	CA	$z^7D_4 - e^7P_3$
6	3182.0558	3182.9762	Fe I	CA	$z^7D_4 - e^5G_4$	6	3221.9153	3222.8457	Fe I	CA	$z^7D_1 - f^7D_1$
10	3182.9774	3183.8980	Fe I	CA	$a^5P_2 - v^3D_3$	300	3222.0452	3222.9757	Fe I	CA	$b^3G_5 - w^1G_4$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
300	3222.0666	3222.9971	Fe I	CA	$z^7D_5 - f^7D_5$	3	3262.274	3263.214	Fe I	P	
8	3222.924	3223.855	Fe II	P		6	3263.3678	3264.3087	Fe I	CA	$a^3P_1 - w^3P_2$
4	3223.272	3224.203	Fe I	P	$a^3F_4 - z^5H_5$	6	3263.411	3264.352	Ne II	CP	
3	3223.8405	3224.7714	Fe I	CA	$a^5F_2 - y^3D_1$	8	3264.5121	3265.4533	Fe I	CA	$a^5P_2 - v^5F_1$
40	3224.818	3225.749	Ne II	CP		4	3264.6957	3265.6369	Fe I	CA	$z^7D_2 - f^5D_3$
6	3225.6071	3226.5385	Fe I	CA	$a^3H_5 - x^1G_4$	80	3265.0465	3265.9879	Fe I	CA	$a^5D_2 - z^3D_3$
600	3225.785	3226.716	Fe I	P	$z^7D_5 - e^7F_6$	50	3265.6166	3266.5580	Fe I	CA	$a^5P_3 - v^5P_2$
6	3226.7133	3227.6449	Fe I	CA	$a^5D_2 - z^3D_2$	4	3265.923	3266.865	P		
80	3227.7959	3228.7278	Fe I	CA	$z^7D_4 - f^5D_3$	8	3268.2326	3269.1748	Fe I	CA	$a^5P_1 - x^3P_1$
5	3227.9956	3228.9276	Fe I	CA	$b^3P_2 - v^3P_1$	3	3269.2285	3270.1709	Fe I	CA	$z^5F_3 - i^5D_2$
20	3228.2490	3229.1810	Fe I	CA	$z^7D_2 - f^5D_1$	6	3269.872	3270.814	Ne II	CP	
6	3228.901	3229.833	Fe I	P	$z^7D_1 - f^5D_0$	3	3269.9437	3270.8863	Fe I	CA	$a^5P_3 - v^5F_3$
40	3229.1207	3230.0530	Fe I	CA	$a^5D_0 - z^3D_1$	6	3270.800	3271.743	Ne II	CP	
60	3229.57	3230.51	Bl	P		50	3270.9997	3271.9425	Fe I	CA	$a^5P_2 - v^5P_1$
10	3229.797	3230.729	Fe I	P	$b^3F_3 - u^5F_2$	5	3271.4848	3272.4278	Fe I	CA	$a^3D_3 - u^3F_3$
0	3229.994	3230.927	Fe I	P	$a^1G_4 - x^1H_5$	5	3271.6829	3272.6260	Fe I	CA	$a^3F_4 - x^5P_3$
200	3230.070	3231.001	Ne II	CP		5	3274.450	3275.394	Fe I	P	$z^5F_4 - i^5D_4$
20	3230.2076	3231.1401	Fe I	CA	$z^7D_2 - e^7P_2$	4	3275.180	3276.124	Ne II	CP	
20	3230.420	3231.352	Fe II	P		3	3275.6718	3276.6158	Fe I	CA	$a^3G_3 - w^3H_4$
40	3230.9631	3231.8958	Fe I	CA	$z^7D_3 - f^5D_2$	3	3275.8406	3276.7846	Fe I	CA	$b^3G_5 - 13_4$
4	3232.023	3232.956	Fe II	P		5	3276.4696	3277.4138	Fe I	CA	$a^5P_2 - v^5F_2$
80	3233.051	3233.984	Fe I	P	$b^3H_6 - x^3I_7$	8	3278.7303	3279.6751	Fe I	CA	$b^3F_3 - v^3F_3$
50	3233.9675	3234.9010	Fe I	CA	$z^7D_4 - e^7P_4$	8	3278.7403	3279.6851	Fe I	CA	$a^3P_1 - w^3P_1$
120	3234.6130	3235.5466	Fe I	CA	$a^5D_3 - z^3D_3$	4	3279.7299	3280.6750	Fe I	CA	$b^3G_4 - t^3G_3$
300	3236.2222	3237.1562	Fe I	CA	$a^5D_3 - z^3F_4$	50	3280.2593	3281.2045	Fe I	ED	$b^3H_4 - x^3I_5$
4	3237.227	3238.161	Fe I	P	$b^3F_3 - 7_2$	4	3280.7473	3281.6927	Fe I	CA	$b^3G_3 - w^1G_4$
5	3239.0125	3239.9473	Fe I	CA	$a^3P_2 - w^3F_3$	3	3282.7165	3283.6623	Fe I	CA	$b^3G_5 - t^3G_4$
5	3239.0427	3239.9775	Fe I	CA	$a^3P_2 - v^3D_2$	10	3282.8903	3283.8361	Fe I	CA	$a^3D_1 - u^3F_2$
100	3239.4328	3240.3676	Fe I	CA	$z^7D_4 - f^5D_4$	4	3283.4180	3284.3640	Fe I	CA	$a^5F_3 - y^3D_3$
100	3239.4572	3240.3920	Fe I	CA	$z^7D_1 - f^5D_1$	4	3283.543	3284.489	P		
4	3243.1077	3244.0435	Fe I	CA	$a^3H_4 - x^1G_4$	8	3284.5872	3285.5335	Fe I	CA	$a^5P_2 - v^5P_2$
8	3243.404	3244.340	Fe I	P	$z^5F_5 - i^5D_4$	5	3285.1936	3286.1401	Fe I	CA	$z^7P_3 - g^7D_2$
80	3244.1869	3245.1230	Fe I	CA	$z^7D_4 - f^7D_5$	8	3285.417	3286.363	P		
4	3245.9653	3246.9018	Fe I	CA	$a^5F_4 - y^3D_3$	5	3286.0158	3286.9625	Fe I	CA	$a^5P_1 - v^5F_1$
80	3246.0047	3246.9412	Fe I	CA	$a^5D_1 - z^3D_2$	4	3286.4450	3287.3918	Fe I	CA	$z^5F_3 - i^5D_3$
6	3246.4802	3247.4168	Fe I	CA	$b^3F_3 - u^3G_4$	150	3286.7508	3287.6977	Fe I	SM	$a^5P_3 - v^5P_3$
12	3246.9602	3247.8970	Fe I	CA	$a^5P_2 - x^3P_1$	8	3287.0900	3288.0369	Fe I	CA	$z^7P_4 - g^7D_4$
4	3247.177	3248.113	Fe II	P		4	3288.6488	3289.5962	Fe I	CA	$a^3P_1 - w^3P_0$
5	3247.210	3248.146	P			3	3288.690	3289.637	P		
10	3247.2790	3248.2159	Fe I	CA	$z^7D_2 - f^5D_2$	5	3288.9648	3289.9122	Fe I	CA	$a^5P_2 - v^5F_3$
8	3248.2047	3249.1417	Fe I	CA	$z^7D_3 - f^5D_3$	2	3289.4327	3290.3802	Fe I	CA	$b^3P_2 - z^1P_1$
3	3248.345	3249.282	P			4	3290.7104	3291.6583	Fe I	CA	$a^5P_3 - v^5F_4$
6	3249.1918	3250.1291	Fe I	CA	$b^3F_4 - 4_4$	12	3290.9879	3291.9358	Fe I	CA	$a^5P_1 - x^3P_2$
15	3250.3716	3251.3092	Fe I	CA	$a^3P_2 - v^3D_3$	40	3292.0207	3292.9688	Fe I	CA	$a^3D_3 - u^3F_4$
15	3250.3959	3251.3335	Fe I	CA	$b^3P_0 - v^3P_1$	20	3292.5893	3293.5376	Fe I	CA	$a^5P_1 - v^5P_1$
12	3250.6229	3251.5605	Fe I	CA	$a^5P_3 - x^3P_2$	6	3293.1402	3294.0887	Fe I	CA	$a^3F_2 - z^5H_3$
5	3250.760	3251.698	P			4	3296.4640	3297.4134	Fe I	CA	$b^3F_3 - v^3F_2$
15	3251.2335	3252.1713	Fe I	CA	$a^5P_2 - w^3G_3$	3	3296.8031	3297.7525	Fe I	CA	$b^3H_4 - v^1G_4$
6	3252.430	3253.368	P			15	3298.1316	3299.0814	Fe I	CA	$a^5P_1 - v^5F_2$
8	3252.9142	3253.8525	Fe I	CA	$b^3F_4 - u^3G_5$	3	3299.076	3300.026	Fe I	P	$z^5F_3 - i^5D_4$
10	3253.6003	3254.5387	Fe I	CA	$a^3D_3 - v^1G_4$	3	3299.5062	3300.4563	Fe I	CA	$a^3F_3 - x^5P_2$
8	3253.8249	3254.7634	Fe I	CA	$b^3F_4 - v^3F_3$	4	3301.2176	3302.1681	Fe I	CA	$b^3P_1 - z^1P_1$
3	3253.9431	3254.8817	Fe I	CA	$b^3F_2 - x^1D_2$	4	3301.441	3302.392	P		
60	3254.3608	3255.2994	Fe I	ED	$b^3H_5 - x^3I_6$	4	3301.9128	3302.8635	Fe I	CA	$b^3H_6 - u^3H_5$
5	3254.7265	3255.6653	Fe I	CA	$a^3G_5 - w^3H_6$	4	3303.529	3304.481	P		
5	3257.2119	3258.1513	Fe I	CA	$a^5F_2 - y^3D_2$	5	3303.5684	3304.5196	Fe I	CA	$b^3G_3 - t^3G_3$
5	3257.2358	3258.1752	Fe I	CA	$b^3G_4 - w^1G_4$	4	3303.774	3304.725	P		
12	3257.5923	3258.5317	Fe I	CA	$a^5P_3 - v^5F_2$	120	3305.9700	3306.9217	Fe I	ED	$a^5P_2 - v^5P_3$
5	3258.774	3259.714	Fe II	P		200	3306.3430	3307.2949	Fe I	CA	$a^1G_4 - w^1G_4$
3	3259.052	3259.992	Fe II	P		200	3306.3571	3307.3090	Fe I	CA	$a^5P_1 - v^5P_2$
8	3259.9894	3260.9294	Fe I	CA	$z^7D_3 - f^5D_4$	6	3306.4810	3307.4329	Fe I	CA	$a^3D_2 - u^3F_2$
6	3260.2668	3261.2069	Fe I	CA	$b^3F_4 - v^3F_4$	5	3307.0055	3307.9575	Fe I	CA	$b^3G_5 - 12_5$
4	3261.3255	3262.2659	Fe I	CA	$z^5F_2 - 4_2$	5	3307.144	3308.096	P		
5	3262.0086	3262.9492	Fe I	CA	$z^5F_4 - i^5D_3$	25	3307.2331	3308.1852	Fe I	CA	$b^3H_6 - u^3H_6$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
5	3307.685	3308.638		P		6	3344.938	3345.900		P	
150	3309.737	3310.690	Ne II	CP		800	3345.454	3346.415	Ne II	CP	
10	3310.3415	3311.2944	Fe I	CA	$b^3G_5 - t^3G_5$	150	3345.829	3346.791	Ne II	CP	
4	3310.4903	3311.4432	Fe I	CA	$a^3D_3 - u^3H_4$	8	3346.9346	3347.8968	Fe I	CA	$a^5P_3 - l^2$
20	3311.272	3312.225	Ne II	CP		4	3347.4982	3348.4605	Fe I	CA	$b^3G_4 - t^3G_5$
3	3311.4491	3312.4022	Fe I	CA	$a^5F_2 - y^3D_3$	8	3347.9251	3348.8875	Fe I	CA	$a^3P_2 - v^5F_2$
3	3312.2226	3313.1759	Fe I	CA	$b^3G_4 - l^3_4$	4	3349.7273	3350.6901	Fe I	CA	$b^3P_2 - t^3D_2$
3	3313.7146	3314.6683	Fe I	CA	$a^3F_2 - y^5G_3$	4	3350.2564	3351.2194	Fe I	CA	$a^3H_5 - v^3G_5$
3	3314.0647	3315.0185	Fe I	CA	$a^1P_1 - t^3F_2$	6	3351.5219	3352.4852	Fe I	CA	$a^5P_2 - y^3S_1$
3	3314.4431	3315.3970	Fe I	CA	$b^3F_2 - v^3F_2$	8	3351.7433	3352.7067	Fe I	CA	$a^3G_4 - u^3G_3$
5	3314.674	3315.628	Ne II	CP		8	3351.7492	3352.7126	Ne I	KE	
40	3314.7412	3315.6952	Fe I	CA	$a^3D_2 - u^3F_3$	4	3352.9211	3353.8848	Fe I	CA	$a^3H_4 - y^3H_5$
4	3316.704	3317.659		P		3	3353.2607	3354.2245	Fe I	CA	$a^3H_5 - y^3H_6$
5	3317.1207	3318.0753	Fe I	CA	$a^3P_2 - x^3P_1$	4	3353.567	3354.531	Ne II	CP	
5	3319.031	3319.986		P		6	3354.0598	3355.0238	Fe I	CA	$b^3P_0 - 8_1$
8	3319.2522	3320.2074	Fe I	CA	$b^3G_4 - t^3G_4$	4	3355.018	3355.982	Ne II	CP	
500	3319.723	3320.678	Ne II	CP		400	3355.2275	3356.1918	Fe I	CA	$b^3H_4 - u^3H_4$
5	3320.197	3321.152	Ne II	CP		80	3355.5173	3356.4817	Fe I	CA	$a^5F_3 - y^3F_2$
3	3320.415	3321.370		P		5	3356.3196	3357.2841	Fe I	CA	$a^5F_4 - y^3F_3$
5	3320.6447	3321.6001	Fe I	CA	$a^3H_5 - y^3H_4$	5	3356.4011	3357.3657	Fe I	CA	$a^3P_2 - v^5P_2$
5	3320.7756	3321.7312	Fe I	CA	$z^7P_2 - g^7D_2$	4	3356.685	3357.649	Fe I	P	$a^1G_4 - e X_3$
10	3322.471	3323.427	Fe I	P	$z^7P_4 - g^7D_5$	15	3357.82	3358.78	Bl	P	
1000	3323.734	3324.690	Ne II	CP		4	3359.4870	3360.4523	Fe I	CA	$a^5F_5 - y^3F_4$
5	3324.184	3325.140		P		4	3359.8077	3360.7731	Fe I	CA	$b^3H_4 - u^3H_5$
15	3324.3695	3325.3259	Fe I	CA	$b^3H_5 - u^3H_4$	4	3360.272	3361.237	Fe II	P	
4	3324.485	3325.441		P		5	3360.461	3361.426		P	
12	3324.5369	3325.4934	Fe I	CA	$a^3H_6 - v^3G_5$	100	3360.595	3361.561	Ne II	CP	
6	3325.4647	3326.4214	Fe I	CA	$a^3H_4 - v^3G_3$	4	3360.9272	3361.8929	Fe I	CA	$a^3P_1 - v^3D_1$
4	3326.582	3327.539		P		10	3361.9489	3362.9149	Fe I	CA	$b^3P_1 - t^3D_2$
100	3327.152	3328.109	Ne II	CP		4	3362.161	3363.127		P	
5	3327.4953	3328.4525	Fe I	CA	$a^3H_6 - y^3H_6$	4	3362.267	3363.233		P	
4	3327.667	3328.625		P		5	3362.708	3363.674		P	
5	3327.9516	3328.9089	Fe I	CA	$a^5P_3 - w^5G_4$	8	3362.938	3363.904	Ne II	CP	
4	3328.287	3329.245		P		4	3363.405	3364.371		P	
5	3328.696	3329.653		P		4	3363.8105	3364.7770	Fe I	CA	$a^3G_3 - u^3D_3$
25	3328.8658	3329.8233	Fe I	CA	$b^3H_5 - u^3H_5$	4	3364.264	3365.231		P	
4	3329.045	3330.002	Fe II	P		4	3364.6326	3365.5993	Fe I	CA	$b^3F_3 - z^1F_3$
30	3329.157	3330.115	Ne II	CP		30	3366.7860	3367.7532	Fe I	CA	$a^3G_5 - 4_4$
5	3329.5229	3330.4806	Fe I	CA	$a^1G_4 - t^3G_3$	30	3366.8647	3367.8320	Fe I	CA	$a^5P_2 - l^2$
5	3330.735	3331.693	Ne II	CP		5	3366.981	3367.949	Fe II	P	
6	3331.6117	3332.5700	Fe I	CA	$a^3H_5 - v^3G_4$	5	3367.1564	3368.1238	Fe I	CA	$a^3P_1 - v^3D_2$
5	3331.7760	3332.7343	Fe I	CA	$a^3P_0 - w^3P_1$	80	3367.216	3368.184	Ne II	CP	
6	3334.141	3335.100		P		5	3368.172	3369.140		P	
8	3334.2188	3335.1777	Fe I	CA	$a^3H_5 - y^3H_5$	5	3368.9712	3369.9390	Fe I	CA	$b^3P_2 - u^3D_1$
5	3334.2734	3335.2323	Fe I	CA	$b^3H_5 - u^3H_6$	5	3369.1395	3370.1074	Fe I	CA	$a^3H_4 - v^3G_5$
600	3334.836	3335.795	Ne II	CP		60	3369.5463	3370.5142	Fe I	CA	$a^3G_4 - u^3G_4$
4	3335.3920	3336.3512	Fe I	CA	$b^3F_4 - x^1G_4$	120	3369.8080	3370.7760	Ne I	KE	
12	3335.5097	3336.4689	Fe I	CA	$a^3F_3 - x^5P_3$	400	3369.9078	3370.8758	Ne I	KE	
5	3335.714	3336.674		P		5	3370.081	3371.049		P	
6	3335.7680	3336.7274	Fe I	CA	$b^3P_1 - v^3P_2$	3	3370.560	3371.528		P	
6	3336.092	3337.051	Ne II	CP		3	3370.613	3371.581		P	
5	3336.2567	3337.2162	Fe I	CA	$b^3H_4 - u^3F_4$	120	3370.7829	3371.7512	Fe I	CA	$a^3G_5 - u^3G_5$
12	3337.6642	3338.6240	Fe I	CA	$a^3G_5 - u^3G_4$	4	3371.485	3372.454		P	
5	3338.6208	3339.5809	Fe I	CA	$z^7P_3 - g^7D_4$	20	3371.797	3372.765	Ne II	CP	
5	3339.1946	3340.1548	Fe I	CA	$a^3H_4 - y^3H_4$	6	3372.0723	3373.0409	Fe I	CA	$a^5P_3 - x^3F_2$
4	3339.5777	3340.5380	Fe I	CA	$c^3P_2 - t^5P_1$	4	3372.3432	3373.3118	Fe I	CA	$b^3G_4 - x^1F_3$
8	3340.5643	3341.5248	Fe I	CA	$a^3P_2 - x^3P_2$	4	3372.856	3373.825		P	
15	3341.9060	3342.8669	Fe I	CA	$a^3G_5 - 6_5$	4	3373.8696	3374.8387	Fe I	CA	$a^3G_4 - 6_5$
4	3342.140	3343.101		P		5	3374.062	3375.031	Ne II	CP	
6	3342.2142	3343.1752	Fe I	CA	$a^3P_2 - v^5P_1$	3	3374.191	3375.160		P	
6	3342.2926	3343.2536	Fe I	CA	$b^3P_1 - 8_1$	3	3374.443	3375.412		P	
4	3343.2361	3344.1974	Fe I	CA	$a^5P_3 - z^1G_4$	15	3375.6490	3376.6185	Ne I	KE	
4	3343.508	3344.469		P		6	3376.489	3377.459		P	
4	3343.760	3344.721		P		6	3377.155	3378.125	Ne II	CP	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
15	3377.977	3378.947	Fe I	P		4	3407.530	3408.508		P	
800	3378.217	3379.187	Ne II	CP		4	3409.2082	3410.1863	Fe I	CA	$b^3H_6 - v^3H_5$
50	3378.6785	3379.6488	Fe I	CA	$a^3G_5 - v^3F_4$	4	3410.0270	3411.0053	Fe I	CA	$a^1G_4 - 10_3$
3	3378.732	3379.702		P		12	3410.1683	3411.1466	Fe I	CA	$a^1P_1 - u^3F_2$
25	3379.0184	3379.9887	Fe I	CA	$a^5P_3 - w^3D_2$	5	3410.8957	3411.8742	Fe I	CA	$a^5F_4 - y^3F_4$
8	3379.319	3380.290	Ne II	CP		6	3411.1264	3412.1050	Fe I	CA	$a^3G_5 - x^3H_6$
50	3380.1097	3381.0803	Fe I	CA	$a^3G_3 - u^3G_3$	15	3411.3528	3412.3314	Fe I	CA	$a^3G_4 - v^3F_4$
3	3380.748	3381.719	Fe I	P		250	3413.1312	3414.1103	Fe I	CA	$a^5P_2 - w^3D_3$
3	3381.12	3382.09		P		12	3414.501	3415.481		P	
3	3381.3259	3382.2968	Fe I	CA	$a^3D_3 - w^1F_3$	5	3414.764	3415.743		P	
10	3382.4019	3383.3732	Fe I	CA	$a^5P_3 - z^3H_4$	5	3414.888	3415.868	Ne II	CP	
4	3382.463	3383.434		P		12	3415.5299	3416.5096	Fe I	CA	$a^5P_1 - x^3F_2$
4	3382.716	3383.687		P		6	3416.047	3417.027	Fe II	P	
20	3383.6919	3384.6634	Fe I	CA	$a^5P_2 - w^3D_1$	5	3416.283	3417.263		P	
60	3383.9785	3384.9502	Fe I	CA	$a^5P_3 - x^3F_3$	4	3416.6775	3417.6575	Fe I	CA	$a^3P_0 - v^3D_1$
5	3385.436	3386.408		P		10	3416.912	3417.893	Ne II	CP	
4	3385.545	3386.517		P		5	3417.131	3418.111		P	
4	3386.202	3387.175	Ne II	CP		6	3417.689	3418.669	Ne II	CP	
12	3387.4062	3388.3787	Fe I	CA	$a^3G_3 - x^1D_2$	40	3417.8408	3418.8211	Fe I	CA	$a^5P_1 - u^5D_1$
4	3387.618	3388.590		P		500	3417.9035	3418.8839	Ne I	KE	
50	3388.419	3389.392	Ne II	CP		150	3418.0062	3418.9865	Ne I	KE	
3	3388.618	3389.591		P		10	3418.164	3419.145	Fe I	P	$z^5D_1 - e^3P_0$
8	3388.9678	3389.9408	Fe I	CA	$c^3P_1 - t^5P_1$	40	3418.508	3419.489	Fe I	P	$a^5P_1 - u^5D_0$
12	3389.7426	3390.7158	Fe I	CA	$a^5P_1 - 1_2$	5	3418.867	3419.847		P	
5	3390.551	3391.525	Ne II	CP		5	3419.146	3420.127	Fe I	P	$z^5D_3 - f^3F_2$
4	3390.627	3391.601		P		4	3419.6943	3420.6750	Fe I	CA	$b^3P_1 - t^3D_1$
10	3392.0090	3392.9827	Fe I	CA	$c^3P_2 - v^3P_1$	4	3422.118	3423.100	Fe I	P	
50	3392.3037	3393.2775	Fe I	CA	$a^5P_2 - x^3F_2$	15	3422.493	3423.474	Fe I	P	$b^3G_4 - 9_4$
150	3392.6514	3393.6252	Fe I	CA	$a^5P_3 - w^3D_3$	30	3422.6563	3423.6378	Fe I	CA	$a^5P_1 - w^3D_2$
600	3392.799	3393.773	Ne II	CP		4	3423.571	3424.553	Fe I	P	
6	3392.986	3393.960		P		50	3423.9126	3424.8944	Ne I	KE	
12	3393.182	3394.156		P		60	3424.2840	3425.2660	Fe I	CA	$a^5P_3 - u^5D_3$
5	3393.3781	3394.3521	Fe I	CA	$b^3P_0 - u^3D_1$	20	3425.0104	3425.9925	Fe I	CA	$a^1G_4 - x^1F_3$
4	3393.9156	3394.8898	Fe I	CA	$a^3P_2 - x^3G_3$	4	3425.672	3426.655		P	
4	3394.0771	3395.0513	Fe I	CA	$a^3H_4 - w^3F_3$	12	3426.3257	3427.3081	Fe I	CA	$a^3P_2 - y^3S_1$
20	3394.5833	3395.5576	Fe I	CA	$a^5P_2 - u^5D_1$	20	3426.3793	3427.3618	Fe I	CA	$a^5F_2 - y^3F_3$
4	3396.3777	3397.3525	Fe I	CA	$a^5F_3 - y^3F_3$	20	3426.3872	3427.3697	Fe I	CA	$a^5P_3 - y^3P_2$
5	3396.9759	3397.9509	Fe I	CA	$a^5F_3 - y^5P_2$	25	3426.6285	3427.6110	Fe I	CA	$a^5P_2 - y^3P_1$
5	3397.2055	3398.1805	Fe I	CA	$c^3P_2 - x^1F_3$	6	3426.666	3427.649		P	
5	3397.5521	3398.5272	Fe I	CA	$b^3G_3 - x^1F_3$	5	3426.9882	3427.9708	Fe I	CA	$a^5F_2 - y^5P_2$
5	3397.6385	3398.6136	Fe I	CA	$a^5F_2 - y^5P_1$	500	3427.1192	3428.1019	Fe I	CA	$a^5P_3 - u^5D_4$
4	3397.866	3398.841	Ne II	CP		10	3427.193	3428.176		P	
5	3398.2161	3399.1913	Fe I	CA	$a^3G_3 - u^3G_4$	4	3427.834	3428.817		P	
5	3398.625	3399.601	Fe I	P		5	3428.011	3428.994		P	
5	3398.824	3399.799		P		4	3428.1925	3429.1755	Fe I	CA	$a^5P_2 - u^5D_2$
4	3399.156	3400.132		P		5	3428.228	3429.211		P	
5	3399.2296	3400.2051	Fe I	CA	$a^3G_4 - 4_4$	5	3428.409	3429.391		P	
150	3399.3335	3400.3090	Fe I	CA	$a^5P_2 - w^3D_2$	5	3428.452	3429.435		P	
4	3400.042	3401.018		P		6	3428.498	3429.481		P	
10	3401.5184	3402.4945	Fe I	CA	$a^5F_4 - y^5P_3$	10	3428.686	3429.669		P	
20	3402.255	3403.231	Fe I	P	$b^3H_6 - v^3H_6$	60	3428.7485	3429.7316	Fe I	CA	$z^5P_3 - 4_2$
5	3403.3039	3404.2805	Fe I	CA	$a^3G_4 - u^3G_5$	20	3429.491	3430.474		P	
5	3404.2699	3405.2467	Fe I	CA	$a^5F_1 - y^3F_2$	8	3431.8135	3432.7973	Fe I	CA	$b^3P_2 - u^3D_3$
5	3404.3007	3405.2775	Fe I	CA	$a^3G_4 - v^3F_3$	8	3431.8431	3432.8270	Fe I	CA	$a^3D_2 - w^1D_2$
80	3404.3535	3405.3304	Fe I	CA	$a^5P_2 - x^3F_3$	8	3433.568	3434.552		P	
15	3404.759	3405.736	Fe I	P	$a^3G_4 - t^5D_3$	6	3436.0363	3437.0213	Fe I	CA	$b^3H_5 - v^3H_4$
5	3404.821	3405.798		P		5	3436.467	3437.452		P	
5	3404.890	3405.867	Fe I	P		12	3437.045	3438.030	Fe I	P	$a^1G_4 - y^1F_3$
5	3405.572	3406.550		P		5	3437.6243	3438.6097	Fe I	CA	$a^3H_5 - y^1G_4$
10	3405.8319	3406.8091	Fe I	CA	$a^3G_5 - x^3H_5$	6	3437.9488	3438.9342	Fe I	CA	$b^3H_5 - v^3H_5$
8	3406.4365	3407.4139	Fe I	CA	$a^3D_1 - w^1D_2$	12	3438.308	3439.293	Fe I	P	
25	3406.7999	3407.7773	Fe I	CA	$a^5P_1 - w^3D_1$	8	3438.933	3439.919	Ne II	CP	
20	3406.946	3407.924	Ne II	CP		6	3439.0360	3440.0217	Fe I	CA	$a^3G_4 - x^3H_5$
500	3407.4585	3408.4361	Fe I	CA	$a^5P_3 - x^3F_4$	12	3439.887	3440.873		P	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
6000	3440.6058	3441.5919	Fe I	CA	$a^5D_4 - z^5P_3$	12	3469.8310	3470.8246	Fe I	CA	$b^3F_2 - v^3G_3$
2500	3440.9887	3441.9749	Fe I	CA	$a^5D_3 - z^5P_2$	15	3471.2653	3472.2593	Fe I	CA	$a^5P_1 - y^3P_2$
6	3441.223	3442.210		P		15	3471.3435	3472.3375	Fe I	CA	$a^3P_2 - u^5D_1$
6	3441.905	3442.892	Fe II	P		600	3472.5711	3473.5654	Ne I	KE	
6	3442.141	3443.127		P		2000	3475.4500	3476.4451	Fe I	CA	$a^5D_2 - z^5P_2$
20	3442.3626	3443.3492	Fe I	CA	$a^3P_2 - l^2$	20	3475.650	3476.645	Fe I	P	$a^5P_3 - w^5P_2$
6	3442.6692	3443.6559	Fe I	CA	$a^5F_3 - y^5P_3$	25	3475.8638	3476.8590	Fe I	CA	$a^3H_5 - z^1H_5$
3	3442.9671	3443.9538	Fe I	CA	$a^1D_2 - t^3F_3$	25	3475.8748	3476.8700	Fe I	CA	$b^3P_1 - y^1D_2$
3	3442.9739	3443.9606	Fe I	CA	$c^3P_1 - v^3P_1$	10	3476.345	3477.340	Fe I	P	
5	3443.706	3444.693	Ne II	CP		500	3476.7016	3477.6970	Fe I	CA	$a^5D_0 - z^5P_1$
1000	3443.8762	3444.8632	Fe I	CA	$a^5D_2 - z^5P_1$	15	3476.8549	3477.8503	Fe I	CA	$b^3F_3 - v^3G_4$
5	3444.166	3445.153		P		6	3477.0034	3477.9989	Fe I	CA	$a^3P_1 - x^3P_2$
6	3444.431	3445.418		P		8	3477.647	3478.643	Ne II	CP	
200	3445.1487	3446.1360	Fe I	CA	$a^5P_2 - u^5D_3$	6	3477.8518	3478.8475	Fe I	CA	$a^5P_1 - y^3P_0$
8	3445.763	3446.750		P		6	3478.3697	3479.3655	Fe I	CA	$a^3H_5 - w^3G_4$
8	3445.867	3446.855		P		200	3481.934	3482.930	Ne II	CP	
5	3446.027	3447.014		P		6	3483.0071	3484.0041	Fe I	CA	$a^5F_4 - z^3G_3$
4	3446.261	3447.249		P		6	3484.8506	3485.8480	Fe I	CA	$a^3H_4 - w^3G_3$
5	3446.7864	3447.7741	Fe I	CA	$b^3F_2 - w^3P_1$	6	3484.9785	3485.9760	Fe I	CA	$a^3P_1 - v^5F_2$
4	3446.9496	3447.9374	Fe I	CA	$a^5F_1 - y^5P_2$	12	3485.3397	3486.3373	Fe I	ED	$a^5P_2 - w^5P_1$
25	3447.2776	3448.2655	Fe I	CA	$a^5P_2 - y^3P_2$	3	3486.5503	3487.5482	Fe I	CA	$a^5P_1 - z^3S_1$
600	3447.7028	3448.6908	Ne I	KE		12	3489.6701	3490.6688	Fe I	CA	$b^3G_5 - w^3H_6$
6	3447.999	3448.987		P		2500	3490.5737	3491.5727	Fe I	CA	$a^5D_3 - z^5P_3$
4	3448.421	3449.409	Fe II	P		2	3493.2808	3494.2804	Fe I	CA	$a^3F_4 - x^5F_4$
4	3449.074	3450.063		P		6	3493.6897	3494.6895	Fe I	CA	$a^3G_4 - x^1G_4$
4	3449.409	3450.398		P		6	3494.1636	3495.1635	Fe I	CA	$a^3P_1 - v^5P_2$
5	3449.469	3450.457		P		25	3495.2867	3496.2868	Fe I	CA	$b^3F_4 - w^3F_3$
5	3449.650	3450.638		P		4	3496.1936	3497.1940	Fe I	CA	$a^3H_4 - z^1H_5$
25	3450.3286	3451.3173	Fe I	CA	$a^5P_1 - y^3P_1$	30	3497.1008	3498.1014	Fe I	CA	$a^5P_3 - w^5P_3$
80	3450.7650	3451.7537	Ne I	KE		500	3497.8404	3498.8412	Fe I	CA	$a^5D_1 - z^5P_2$
5	3451.345	3452.333	Fe II	P		250	3498.0640	3499.0649	Ne I	KE	
6	3451.61	3452.60	Bl	P		5	3500.5661	3501.5676	Fe I	CA	$b^3F_3 - w^3F_2$
25	3451.9144	3452.9035	Fe I	CA	$a^5P_1 - u^5D_2$	300	3501.2163	3502.2180	Ne I	KE	
20	3452.2751	3453.2642	Fe I	CA	$a^5F_3 - y^3F_4$	4	3504.8614	3505.8640	Fe I	CA	$a^3P_2 - y^3P_1$
15	3453.0206	3454.0099	Fe I	CA	$a^3G_3 - v^3F_2$	15	3506.4977	3507.5008	Fe I	CA	$a^3P_2 - u^5D_2$
5	3453.066	3454.057	Ne II	CP		10	3508.5179	3509.5214	Fe I	CA	$b^3F_4 - v^3D_3$
15	3453.615	3454.604	Fe II	P		5	3510.4388	3511.4429	Fe I	CA	$a^3P_0 - x^3P_1$
500	3454.1949	3455.1845	Ne I	KE		80	3510.7212	3511.7253	Ne I	KE	
10	3454.772	3455.762		P		20	3511.580	3512.584	Ne II	CP	
5	3456.245	3457.235		P		3	3511.7385	3512.7429	Fe I	CA	$b^3F_4 - w^3F_4$
10	3456.608	3457.598	Ne II	CP		2	3512.0823	3513.0867	Fe I	CA	$z^7F_4 - f^5F_4$
5	3457.004	3457.995	Fe II	P		3	3512.2249	3513.2294	Fe I	CA	$z^7F_4 - e^7G_3$
8	3457.0863	3458.0767	Fe I	CA	$z^5P_3 - i^5D_2$	3	3512.9548	3513.9595	Fe I	CA	$c^3P_1 - z^1P_1$
5	3457.5081	3458.4985	Fe I	CA	$a^3H_4 - y^1G_4$	0	3513.0543	3514.0590	Fe I	CA	$a^3F_3 - x^5F_2$
10	3458.3041	3459.2948	Fe I	CA	$a^3P_1 - x^3P_0$	250	3513.8173	3514.8222	Fe I	CA	$a^5F_5 - z^3G_5$
12	3459.321	3460.312	Ne II	CP		3	3514.6280	3515.6332	Fe I	CA	$a^3H_6 - x^3G_5$
8	3459.4272	3460.4181	Fe I	CA	$a^3G_5 - x^1G_4$	250	3515.1907	3516.1960	Ne I	KE	
6	3459.742	3460.733		P		10	3516.4106	3517.4162	Fe I	CA	$b^3G_3 - w^3H_4$
10	3459.9131	3460.9042	Fe I	CA	$c^3P_2 - z^1P_1$	6	3516.5571	3517.5627	Fe I	CA	$z^7F_3 - e^7G_2$
5	3460.438	3461.429		P		8	3518.6823	3519.6885	Fe I	CA	$z^7F_2 - f^5F_3$
250	3460.5243	3461.5156	Ne I	KE		5	3518.818	3519.824	Fe I	P	$a^5P_2 - w^5P_3$
6	3461.652	3462.644		P		1500	3520.4717	3521.4783	Ne I	KE	
5	3462.3517	3463.3434	Fe I	CA	$a^5P_2 - z^3S_1$	6	3520.8472	3521.8539	Fe I	CA	$b^3F_2 - w^3F_2$
6	3462.8125	3463.8043	Fe I	CA	$b^3P_2 - y^1D_2$	300	3521.2608	3522.2677	Fe I	CA	$a^5F_4 - z^3G_4$
5	3463.3013	3464.2932	Fe I	CA	$a^3F_4 - x^5F_3$	5	3521.837	3522.844	Fe I	P	$a^5P_1 - w^5P_2$
300	3464.3387	3465.3309	Ne I	KE		10	3522.2675	3523.2746	Fe I	CA	$z^7F_5 - e^7G_5$
2	3464.9126	3465.9049	Fe I	CA	$b^3F_3 - y^3H_4$	4	3522.9005	3523.9077	Fe I	CA	$z^7F_2 - e^7S_3$
1200	3465.8603	3466.8529	Fe I	CA	$a^5D_1 - z^5P_1$	4	3523.312	3524.319	Fe I	P	$z^7F_2 - e^7G_1$
4	3466.2806	3467.2733	Fe I	CA	$a^3H_6 - w^3G_5$	20	3524.0775	3525.0850	Fe I	CA	$b^3F_3 - v^3D_2$
0	3466.4984	3467.4911	Fe I	CA	$a^5F_5 - z^3G_4$	15	3524.2394	3525.2470	Fe I	CA	$a^3P_2 - u^5D_3$
300	3466.5787	3467.5715	Ne I	KE		400	3526.0405	3527.0485	Fe I	CA	$a^5D_2 - z^5P_3$
10	3468.8456	3469.8390	Fe I	CA	$b^3F_4 - v^3G_5$	100	3526.1656	3527.1737	Fe I	CA	$a^5F_3 - z^3G_3$
8	3469.0124	3470.0058	Fe I	CA	$b^3H_4 - v^3H_4$	60	3526.2373	3527.2454	Fe I	CA	$z^7F_3 - f^5F_4$
25	3469.3899	3470.3834	Fe I	CA	$b^3P_1 - x^1D_2$	60	3526.3811	3527.3892	Fe I	CA	$z^7F_3 - e^7G_3$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
60	3526.4671	3527.4753	Fe I	CA	$a^3P_2 - y^3P_2$	10	3575.9794	3577.0003	Fe I	CA	$z^7F_2 - e^5S_2$
30	3526.6751	3527.6833	Fe I	CA	$z^7F_2 - e^7G_2$	10	3575.9824	3577.0033	Fe I	CA	$z^7F_2 - e^7F_3$
25	3527.7930	3528.8016	Fe I	CA	$z^7F_4 - e^7G_4$	30	3576.7586	3577.7797	Fe I	CA	$b^3H_5 - 13_4$
6	3529.5258	3530.5347	Fe I	CA	$a^1G_4 - y^3I_5$	2	3578.3818	3579.4033	Fe I	CA	$z^7F_0 - e^7F_1$
20	3529.820	3530.829	Fe I	P	$z^7F_1 - e^7G_1$	4000	3581.1925	3582.2148	Fe I	SD	$a^5F_5 - z^5G_6$
12	3530.3878	3531.3970	Fe I	CA	$z^7F_6 - e^7G_6$	15	3581.6472	3582.6696	Fe I	CA	$a^3G_5 - v^3G_4$
4	3531.4368	3532.4462	Fe I	CA	$a^3H_5 - v^5F_4$	10	3581.8073	3582.8298	Fe I	CA	$c^3P_1 - t^3D_2$
25	3533.007	3534.017	Fe I	P	$z^7F_0 - e^7G_1$	150	3582.1995	3583.2220	Fe I	CA	$b^3H_6 - 12_5$
100	3533.1986	3534.2085	Fe I	CA	$z^7F_1 - e^7G_2$	2	3582.5668	3583.5894	Fe I	CA	$a^3H_4 - w^5G_3$
5	3534.527	3535.537	Fe I	P	$a^1H_5 - x^3I_5$	4	3582.6867	3583.7094	Fe I	CA	$z^7F_1 - e^5S_2$
200	3536.5558	3537.5666	Fe I	CA	$z^7F_2 - e^7G_3$	12	3583.326	3584.349	Fe I	P	$z^5D_0 - f^3D_1$
5	3537.4919	3538.5029	Fe I	CA	$b^3F_3 - v^3D_3$	150	3584.6604	3585.6836	Fe I	CA	$a^3G_5 - y^3H_5$
15	3537.7302	3538.7413	Fe I	CA	$b^3F_2 - v^3D_1$	2	3584.7865	3585.8097	Fe I	CA	$z^7F_3 - f^7D_2$
25	3537.8951	3538.9062	Fe I	CA	$z^7F_5 - f^5F_5$	120	3584.9290	3585.9522	Fe I	CA	$z^7P_3 - e^5P_2$
4	3538.3040	3539.3152	Fe I	CA	$a^1D_2 - u^3F_2$	120	3584.9572	3585.9805	Fe I	CA	$b^3H_5 - v^3G_4$
0	3538.5546	3539.5659	Fe I	CA	$a^3P_0 - v^5P_1$	1	3585.1887	3586.2120	Fe I	CA	$b^3G_5 - u^3G_4$
6	3538.781	3539.792	Fe I	P	$a^1H_5 - x^3I_6$	300	3585.3189	3586.3422	Fe I	CA	$a^5F_3 - z^5G_3$
20	3540.1207	3541.1324	Fe I	CA	$z^7F_3 - g^5D_4$	150	3585.7052	3586.7286	Fe I	CA	$a^5F_4 - z^5G_4$
10	3540.7094	3541.7212	Fe I	CA	$a^5F_4 - z^5G_3$	200	3586.1030	3587.1265	Fe I	CA	$c^3P_2 - t^3D_3$
300	3541.0832	3542.0951	Fe I	CA	$z^7F_4 - e^7G_5$	200	3586.1141	3587.1376	Fe I	CA	$b^3H_6 - t^3G_5$
250	3542.0752	3543.0874	Fe I	CA	$z^7F_3 - e^7G_4$	15	3586.7387	3587.7624	Fe I	CA	$z^7F_6 - e^5G_6$
15	3542.2433	3543.2555	Fe I	CA	$a^3P_2 - z^3S_1$	400	3586.9840	3588.0077	Fe I	CA	$a^5F_2 - z^5G_2$
4	3543.3853	3544.3979	Fe I	CA	$a^3H_5 - z^3G_5$	15	3587.2387	3588.2626	Fe I	CA	$z^7F_3 - e^5G_4$
6	3543.6743	3544.6869	Fe I	CA	$a^1P_1 - w^1D_2$	15	3587.4241	3588.4479	Fe I	CA	$a^3P_1 - l_2$
5	3544.6327	3545.6456	Fe I	CA	$b^3F_2 - v^3D_2$	40	3587.7606	3588.7845	Fe I	CA	$a^3D_1 - t^5P_1$
20	3545.6403	3546.6534	Fe I	CA	$z^7F_4 - e^7F_4$	50	3588.6093	3589.6335	Fe I	CA	$z^7F_5 - e^5G_5$
4	3545.8318	3546.8450	Fe I	CA	$a^1G_4 - w^3H_4$	12	3588.9161	3589.9403	Fe I	CA	$z^7F_2 - f^7D_1$
3	3546.2040	3547.2172	Fe I	CA	$a^3H_5 - x^3G_4$	20	3589.1050	3590.1293	Fe I	CA	$a^5F_5 - z^5G_5$
5	3547.1950	3548.2085	Fe I	CA	$b^3H_4 - w^1G_4$	15	3589.4523	3590.4767	Fe I	CA	$a^3G_4 - v^3G_3$
5	3547.2238	3548.2373	Fe I	CA	$z^7F_6 - e^7F_5$	6	3590.0834	3591.1080	Fe I	CA	$b^3G_5 - 6_5$
5	3548.0197	3549.0334	Fe I	CA	$c^3P_2 - u^3D_1$	4	3591.0006	3592.0254	Fe I	CA	$z^5D_4 - e^3G_5$
2	3549.8601	3550.8743	Fe I	CA	$a^3F_2 - x^5F_1$	10	3591.3482	3592.3731	Fe I	CA	$z^7F_4 - e^7F_5$
8	3552.1056	3553.1203	Fe I	CA	$c^3P_1 - v^3P_2$	3	3591.4823	3592.5073	Fe I	CA	$z^5D_0 - g^5F_1$
12	3552.8287	3553.8437	Fe I	CA	$z^7F_2 - e^7F_2$	3	3592.4723	3593.4974	Fe I	CA	$b^3F_3 - y^1G_4$
80	3553.7390	3554.7541	Fe I	CA	$a^1H_5 - v^1G_4$	4	3592.672	3593.697	Fe I	P	$z^5D_2 - h^5D_2$
5	3554.1175	3555.1328	Fe I	CA	$a^5F_3 - z^5G_2$	2	3592.8933	3593.9186	Fe I	CA	$a^5P_2 - x^3D_1$
8	3554.5027	3555.5181	Fe I	CA	$z^7F_1 - e^5G_2$	6	3593.3247	3594.3501	Fe I	CA	$z^5D_2 - f^5G_3$
400	3554.9247	3555.9402	Fe I	CA	$z^7F_5 - e^7G_6$	500	3593.5262	3594.5516	Ne I	KE	
6	3556.6799	3557.6958	Fe I	CA	$z^7F_3 - e^5G_3$	300	3593.6396	3594.6651	Ne I	KE	
200	3556.8785	3557.8945	Fe I	CA	$z^7F_4 - f^5F_5$	100	3594.6331	3595.6588	Fe I	CA	$z^7F_4 - f^7D_4$
400	3558.5148	3559.5312	Fe I	CA	$a^5F_2 - z^3G_3$	5	3595.3016	3596.3275	Fe I	CA	$z^7F_2 - f^7D_2$
5	3559.5048	3560.5215	Fe I	CA	$c^3P_1 - 8_1$	3	3595.8630	3596.8890	Fe I	CA	$a^3H_4 - w^5G_4$
10	3560.6972	3561.7141	Fe I	CA	$a^3D_3 - 13_4$	12	3596.1966	3597.2227	Fe I	CA	$a^3H_5 - w^5G_5$
2	3564.1078	3565.1257	Fe I	CA	$a^3F_2 - x^5F_2$	6	3597.0201	3598.0465	Fe I	CA	$z^5D_2 - h^5D_1$
1000	3565.3786	3566.3967	Fe I	CA	$a^5F_3 - z^3G_4$	12	3598.715	3599.742	Fe I	P	$a^3D_3 - 11_3$
50	3565.5800	3566.5982	Fe I	CA	$z^7F_3 - e^7F_3$	2	3598.9277	3599.9545	Fe I	CA	$z^5D_1 - g^5F_2$
4	3566.5793	3567.5978	Fe I	CA	$a^3H_6 - w^5G_5$	3	3598.9781	3600.0049	Fe I	CA	$z^7F_0 - f^7D_1$
10	3567.0304	3568.0491	Fe I	CA	$z^7F_2 - e^5G_3$	12	3599.6243	3600.6513	Fe I	CA	$a^1H_5 - u^3F_4$
10	3567.3673	3568.3860	Fe I	CA	$a^3H_4 - x^3G_4$	150	3600.1691	3601.1963	Ne I	KE	
15	3568.8223	3569.8413	Fe I	CA	$a^3D_3 - t^3G_4$	3	3602.0817	3603.1093	Fe I	CA	$z^7F_1 - f^7D_2$
10	3568.9755	3569.9946	Fe I	CA	$a^3G_5 - y^3H_4$	15	3602.4617	3603.4894	Fe I	CA	$z^7F_3 - f^7D_3$
0	3570.0106	3571.0299	Fe I	CA	$a^3P_1 - y^3S_1$	20	3602.5259	3603.5537	Fe I	CA	$z^7F_3 - e^7P_2$
1200	3570.0971	3571.1165	Fe I	CA	$a^5F_4 - z^3G_5$	20	3602.5479	3603.5757	Fe I	CA	$z^7P_4 - f^5F_4$
800	3570.255	3571.274	Fe I	P	$z^7F_6 - e^7G_7$	150	3603.2043	3604.2323	Fe I	CA	$a^3G_5 - v^3G_5$
12	3571.2241	3572.2438	Fe I	CA	$a^3F_4 - x^5D_3$	5	3603.5675	3604.5955	Fe I	CA	$a^3H_5 - w^5G_6$
120	3571.9961	3573.0160	Fe I	CA	$z^7F_5 - e^7F_5$	6	3603.8189	3604.8470	Fe I	CA	$c^3P_1 - u^3D_1$
8	3572.5908	3573.6108	Fe I	CA	$z^7F_4 - e^5G_4$	2	3604.367	3605.395	Fe I	P	$z^7F_1 - f^5D_0$
100	3573.3934	3574.4137	Fe I	CA	$a^3D_2 - t^3G_3$	200	3605.4537	3606.4822	Fe I	CA	$a^3G_4 - y^3H_4$
60	3573.8292	3574.8496	Fe I	CA	$a^3H_6 - w^5G_6$	200	3605.5003	3606.5288	Fe I	CA	$z^7F_6 - f^7D_5$
60	3573.8883	3574.9087	Fe I	CA	$b^3H_4 - t^3G_3$	500	3606.6797	3607.7085	Fe I	CA	$a^3G_5 - y^3H_6$
250	3574.62	3575.64	Bl	P		15	3608.1424	3609.1716	Fe I	CA	$z^7F_4 - e^5G_5$
5	3575.1135	3576.1342	Fe I	CA	$z^7F_1 - e^7F_1$	1500	3608.8587	3609.8881	Fe I	CA	$a^5F_1 - z^5G_2$
12	3575.2456	3576.2664	Fe I	CA	$z^7F_5 - f^7D_4$	20	3609.1790	3610.2085	Ne I	KE	
15	3575.3713	3576.3921	Fe I	CA	$c^3P_2 - u^3D_2$	250	3610.158	3611.188	Fe I	P	$z^7F_6 - e^7F_6$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
5	3610.6951	3611.7250	Fe I	CA	$z^7F_2 - f^5D_1$	100	3676.3115	3677.3584	Fe I	CA	$b^3F_4 - x^3G_5$
60	3612.0679	3613.0982	Fe I	CA	$z^7F_5 - e^5G_6$	2	3677.3076	3678.3547	Fe I	CA	$a^1D_2 - w^1F_3$
3	3612.9265	3613.9569	Fe I	CA	$a^5P_3 - x^3D_3$	150	3677.6288	3678.6760	Fe I	CA	$a^3G_3 - w^3F_2$
3	3612.9393	3613.9698	Fe I	CA	$a^3F_3 - x^5D_2$	12	3678.8601	3679.9076	Fe I	CA	$a^3P_1 - y^3P_2$
3	3613.1455	3614.1760	Fe I	CA	$z^7F_2 - e^7P_2$	1500	3679.9132	3680.9610	Fe I	CA	$a^5D_4 - z^5F_4$
6	3614.550	3615.581	Fe I	P		10	3680.669	3681.717	Fe I	P	$z^5D_4 - g^5F_5$
2	3615.1904	3616.2214	Fe I	CA	$z^5D_1 - h^5D_1$	200	3682.2425	3683.2909	Fe I	CA	$a^1D_2 - w^1D_2$
2	3615.6622	3616.6934	Fe I	CA	$a^3F_4 - x^5D_4$	200	3682.2426	3683.2909	Ne I	KE	
3	3616.1468	3617.1781	Fe I	CA	$z^5D_4 - h^5D_3$	120	3683.0545	3684.1030	Fe I	CA	$a^5D_3 - z^5F_2$
4	3616.3194	3617.3507	Fe I	CA	$a^3P_1 - x^3F_2$	150	3684.1068	3685.1557	Fe I	CA	$a^3G_4 - v^3D_3$
8	3616.562	3617.593	Fe I	P		120	3685.7357	3686.7850	Ne I	KE	
2	3617.0999	3618.1314	Fe I	CA	$a^1G_4 - t^3D_3$	120	3685.9983	3687.0476	Fe I	CA	$z^7P_4 - e^7F_5$
8	3617.318	3618.350	Fe I	P		8	3686.2588	3687.3082	Fe I	CA	$a^3P_1 - y^3P_0$
150	3617.7879	3618.8196	Fe I	CA	$c^3P_2 - u^3D_3$	8	3687.0965	3688.1461	Fe I	CA	$a^5P_3 - v^5D_2$
25	3618.3808	3619.4126	Fe I	CA	$z^5D_3 - f^5G_4$	500	3687.4564	3688.5061	Fe I	CA	$a^5F_5 - y^5F_4$
25	3618.3862	3619.4181	Fe I	CA	$a^3G_4 - v^3G_4$	30	3687.6581	3688.7079	Fe I	CA	$a^3G_4 - w^3F_4$
1500	3618.7676	3619.7995	Fe I	CA	$a^5F_2 - z^5G_3$	120	3689.4773	3690.5276	Fe I	CA	$b^3P_1 - w^3P_1$
3	3619.7683	3620.8005	Fe I	CA	$a^3H_6 - z^3H_5$	20	3690.7266	3691.7772	Fe I	CA	$a^1H_5 - s^3G_5$
5	3620.2425	3621.2749	Fe I	CA	$z^7F_4 - e^7P_3$	150	3694.0078	3695.0592	Fe I	CA	$z^7P_2 - e^7S_3$
200	3621.4616	3622.4943	Fe I	CA	$a^3G_4 - y^3H_5$	250	3694.214	3695.265	Ne II	CP	
6	3621.7181	3622.7508	Fe I	CA	$a^1H_5 - u^3H_4$	120	3695.0514	3696.1031	Fe I	CA	$a^1G_4 - 6^5$
150	3622.0042	3623.0370	Fe I	CA	$a^3G_3 - v^3G_3$	120	3695.0523	3696.1040	Fe I	CA	$b^3F_3 - v^5F_4$
150	3623.1856	3624.2187	Fe I	ED	$a^3H_6 - z^3H_6$	2	3695.5159	3696.5677	Fe I	CA	$z^5F_2 - g^7D_2$
25	3623.4296	3624.4628	Fe I	CA	$b^3G_5 - u^3G_5$	2	3695.5163	3696.5681	Fe I	CA	$b^3F_4 - w^5G_3$
25	3623.4472	3624.4803	Fe I	CA	$b^3F_4 - w^3G_5$	30	3697.4251	3698.4774	Fe I	CA	$z^7P_3 - e^5G_3$
10	3623.7722	3624.8055	Fe I	CA	$z^7F_3 - f^5D_2$	10	3698.6021	3699.6547	Fe I	CA	$c^3P_2 - v^3F_3$
3	3624.3092	3625.3426	Fe I	CA	$a^3P_1 - w^3D_2$	150	3701.0865	3702.1397	Fe I	CA	$z^7P_3 - e^7F_4$
25	3625.1414	3626.1750	Fe I	CA	$z^7F_5 - f^5D_4$	100	3701.2250	3702.2783	Ne I	KE	
15	3630.3484	3631.3834	Fe I	CA	$z^7F_4 - f^5D_3$	8	3702.0285	3703.0820	Fe I	CA	$b^3P_1 - w^3P_0$
100	3631.0961	3632.1312	Fe I	CA	$z^7F_5 - f^7D_5$	4	3703.547	3704.601	Fe I	P	
1200	3631.4629	3632.4981	Fe I	CA	$a^5F_3 - z^5G_4$	3	3703.6914	3704.7453	Fe I	CA	$z^7P_4 - e^5G_5$
60	3632.0410	3633.0763	Fe I	CA	$c^3P_1 - u^3D_2$	15	3703.8212	3704.8751	Fe I	CA	$b^3P_0 - w^3P_1$
15	3632.5547	3633.5902	Fe I	CA	$b^3G_5 - v^3F_4$	80	3704.4617	3705.5158	Fe I	CA	$a^3G_5 - y^1G_4$
12	3632.9777	3634.0134	Fe I	CA	$a^3P_0 - y^3S_1$	1200	3705.5657	3706.6201	Fe I	CA	$a^5D_3 - z^5F_3$
200	3633.6646	3634.7004	Ne I	KE		60	3707.0411	3708.0959	Fe I	CA	$z^7P_3 - e^5S_2$
25	3634.3282	3635.3642	Fe I	CA	$z^7P_4 - e^5G_3$	60	3707.0444	3708.0992	Fe I	CA	$z^7P_3 - e^7F_3$
30	3634.698	3635.734	Fe I	P		150	3707.8215	3708.8765	Fe I	CA	$a^5D_2 - z^5F_1$
3	3636.2235	3637.2600	Fe I	CA	$a^1D_2 - s^3G_3$	300	3707.9195	3708.9745	Fe I	CA	$a^5P_3 - y^5S_2$
25	3636.9946	3638.0312	Fe I	CA	$b^3F_3 - w^3G_4$	600	3709.2459	3710.3013	Fe I	CA	$a^5F_4 - y^5F_3$
100	3638.2978	3639.3348	Fe I	CA	$a^3G_3 - y^3H_4$	0	3709.5341	3710.5895	Fe I	CA	$b^3G_4 - x^3H_5$
200	3640.3892	3641.4268	Fe I	CA	$a^3G_4 - v^3G_5$	150	3709.621	3710.676	Ne II	CP	
30	3643.6216	3644.6600	Fe I	CA	$z^7P_4 - e^7F_3$	50	3711.2225	3712.2784	Fe I	CA	$b^3F_3 - x^3G_4$
80	3643.7170	3644.7554	Fe I	CA	$b^3F_2 - w^3G_3$	30	3711.4075	3712.4634	Fe I	CA	$c^3P_1 - y^1D_2$
12	3645.4748	3646.5137	Fe I	CA	$z^7F_3 - f^5D_3$	400	3713.080	3714.136	Ne II	CP	
12	3645.4945	3646.5333	Fe I	CA	$b^3G_3 - x^1D_2$	15	3715.9106	3716.9677	Fe I	CA	$a^3P_2 - x^3D_2$
12	3645.5035	3646.5423	Fe I	CA	$z^7P_3 - f^5F_3$	120	3716.4421	3717.4993	Fe I	CA	$z^7P_4 - e^7P_3$
15	3645.8212	3646.8602	Fe I	CA	$c^3P_0 - u^3D_1$	15	3718.4063	3719.4640	Fe I	CA	$a^3G_3 - v^3D_3$
12	3647.4087	3648.4480	Fe I	CA	$a^3F_3 - x^5D_3$	8000	3719.9346	3720.9927	Fe I	CA	$a^5D_4 - z^5F_5$
1500	3647.8424	3648.8819	Fe I	CA	$a^5F_4 - z^5G_5$	8	3721.1840	3722.2425	Fe I	CA	$c^3P_2 - v^3F_2$
20	3649.3029	3650.3427	Fe I	CA	$a^5D_4 - z^5F_3$	12	3721.2714	3722.3299	Fe I	CA	$a^5P_3 - v^5D_4$
250	3649.5064	3650.5463	Fe I	CA	$a^3G_5 - w^3F_4$	12	3721.2728	3722.3312	Fe I	CA	$z^5F_5 - e^5G_5$
20	3650.0313	3651.0714	Fe I	CA	$z^7P_3 - e^7S_3$	10	3721.3944	3722.4529	Fe I	CA	$a^3P_0 - y^3P_1$
80	3650.2793	3651.3194	Fe I	CA	$a^3H_5 - z^3H_5$	25	3721.5046	3722.5631	Fe I	CA	$z^7P_2 - e^5G_2$
200	3651.4674	3652.5078	Fe I	CA	$a^3G_3 - v^3G_4$	25	3721.5999	3722.6585	Fe I	CA	$b^3G_3 - v^3F_2$
15	3655.4645	3656.5059	Fe I	CA	$b^3P_2 - w^3P_2$	20	3722.0240	3723.0827	Fe I	CA	$a^3G_3 - w^3F_4$
50	3659.5164	3660.5589	Fe I	CA	$a^3H_4 - z^3H_4$	1500	3722.5625	3723.6213	Fe I	CA	$a^5D_2 - z^5F_2$
150	3664.073	3665.117	Ne II	CP		120	3724.3768	3725.4361	Fe I	CA	$a^3P_2 - x^3D_3$
6	3664.5367	3665.5805	Fe I	CA	$z^7P_3 - f^5F_4$	60	3725.4911	3726.5507	Fe I	CA	$a^1G_4 - 4^4$
10	3667.252	3668.297	Fe I	BW	$z^5D_4 - f^5P_3$	15	3726.8963	3727.9562	Fe I	CA	$a^5P_2 - v^5D_3$
15	3669.1520	3670.1970	Fe I	CA	$b^3G_4 - v^3F_3$	15	3726.9273	3727.9873	Fe I	CA	$z^7P_2 - e^7F_2$
15	3669.5210	3670.5661	Fe I	CA	$a^3G_4 - w^3F_3$	60	3727.0930	3728.1530	Fe I	CA	$z^7P_4 - f^5D_3$
120	3670.0237	3671.0689	Fe I	CA	$b^3P_1 - w^3P_2$	200	3727.105	3728.165	Ne II	CP	
150	3670.0890	3671.1342	Fe I	CA	$b^3G_5 - x^3H_6$	500	3727.6187	3728.6788	Fe I	CA	$a^5F_3 - y^5F_2$
0	3671.519	3672.565	Fe I	BW	$z^5D_2 - f^5P_2$	8	3727.670	3728.730	P		

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
30	3727.8097	3728.8698	Fe I	CA	$z^7P_3 - f^7D_2$	150	3794.337	3795.415	Fe I	P	$a^3H_4 - z^3I_5$
15	3728.6674	3729.7278	Fe I	CA	$b^3F_4 - z^1G_4$	400	3795.0017	3796.0793	Fe I	CA	$a^5F_2 - y^5F_3$
50	3730.3856	3731.4464	Fe I	CA	$a^1G_4 - u^3G_5$	8	3796.0127	3797.0905	Fe I	CA	$a^3H_6 - x^5G_5$
50	3730.9461	3732.0070	Fe I	CA	$b^3F_2 - x^3G_3$	120	3797.5180	3798.5962	Fe I	CA	$b^3H_6 - w^3H_6$
10	3731.3733	3732.4344	Fe I	CA	$b^3F_2 - w^5G_2$	6	3797.9485	3799.0268	Fe I	CA	$b^3F_3 - x^3F_2$
150	3732.3960	3733.4573	Fe I	CA	$a^5P_2 - y^5S_2$	250	3798.5107	3799.5892	Fe I	CA	$a^5F_4 - y^5F_5$
1200	3733.3169	3734.3785	Fe I	CA	$a^5D_1 - z^5F_1$	400	3799.5469	3800.6256	Fe I	CA	$a^5F_3 - y^5F_4$
5000	3734.8636	3735.9256	Fe I	CA	$a^5F_5 - y^5F_5$	30	3801.6786	3802.7579	Fe I	CA	$b^3P_2 - w^3D_3$
120	3735.3239	3736.3860	Fe I	CA	$z^7P_4 - e^7P_4$	15	3801.8114	3802.8908	Fe I	CA	$b^3P_1 - v^3D_2$
6000	3737.1313	3738.1938	Fe I	CA	$a^5D_3 - z^5F_4$	5	3801.997	3803.077	Fe I	P	$z^5F_5 - f^5G_6$
100	3738.3058	3739.3687	Fe I	CA	$b^3H_5 - z^1I_6$	200	3805.3452	3806.4254	Fe I	CA	$b^3H_4 - y^3I_5$
25	3739.522	3740.585	Fe I	P	$a^3D_3 - a^3X_3$	12	3806.2170	3807.2975	Fe I	CA	$a^1P_1 - v^3P_1$
8	3740.0440	3741.1074	Fe I	CA	$z^5F_3 - g^7D_4$	80	3806.6959	3807.7765	Fe I	CA	$b^3H_5 - w^3H_5$
8	3740.0581	3741.1214	Fe I	CA	$a^1G_4 - v^3F_4$	40	3807.5370	3808.6178	Fe I	CA	$a^5P_1 - w^5D_2$
15	3740.239	3741.302	Fe I	P	$a^3D_3 - s^3D_3$	25	3808.7279	3809.8090	Fe I	CA	$b^3F_4 - x^3F_4$
25	3742.6168	3743.6808	Fe I	CA	$z^7P_4 - f^5D_4$	4	3809.0409	3810.1221	Fe I	CA	$b^3P_0 - v^3D_1$
2	3742.946	3744.010	Fe I	BW	$z^5F_1 - f^5G_2$	10	3810.7568	3811.8385	Fe I	CA	$a^3D_2 - 8_1$
400	3743.3616	3744.4258	Fe I	CA	$a^5F_2 - y^5F_1$	30	3811.8931	3812.9750	Fe I	CA	$a^3G_3 - w^3G_3$
80	3743.466	3744.530	Fe I	P	$a^1H_5 - x^1H_5$	600	3812.9641	3814.0463	Fe I	CA	$a^5F_3 - z^3P_2$
5	3743.7772	3744.8415	Fe I	CA	$a^3G_4 - y^1G_4$	60	3813.0586	3814.1409	Fe I	CA	$b^3F_3 - x^3F_3$
12	3744.1036	3745.1680	Fe I	CA	$z^7P_2 - e^7F_1$	10	3813.6338	3814.7163	Fe I	CA	$a^3G_5 - v^5F_4$
6000	3745.5608	3746.6256	Fe I	CA	$a^5D_2 - z^5F_3$	10	3813.882	3814.965	Fe I	P	$a^1I_6 - x^1H_5$
1200	3745.8989	3746.9638	Fe I	CA	$a^5D_0 - z^5F_1$	50	3814.5227	3815.6054	Fe I	CA	$a^5F_1 - z^3P_1$
50	3746.9270	3747.9921	Fe I	CA	$z^7P_3 - f^7D_3$	1500	3815.8397	3816.9227	Fe I	CA	$a^3F_4 - y^3D_3$
3000	3748.2617	3749.3272	Fe I	CA	$a^5D_1 - z^5F_2$	15	3816.3397	3817.4228	Fe I	CA	$a^5P_2 - w^5D_3$
80	3748.9640	3750.0296	Fe I	CA	$z^7P_4 - f^7D_5$	15	3817.640	3818.723	Fe I	P	$z^5F_5 - g^5F_5$
3000	3749.4847	3750.5504	Fe I	CA	$a^5F_4 - y^5F_4$	2500	3820.4251	3821.5093	Fe I	CA	$a^5F_5 - y^5D_4$
5	3750.6818	3751.7479	Fe I	CA	$b^3F_2 - w^5G_3$	150	3821.1788	3822.2632	Fe I	CA	$b^3H_5 - y^3I_6$
6	3751.8213	3752.8877	Fe I	CA	$a^3G_5 - w^3G_4$	30	3821.8334	3822.9180	Fe I	CA	$b^3F_2 - x^3F_2$
40	3753.6108	3754.6776	Fe I	CA	$a^5P_3 - w^5D_2$	50	3824.0737	3825.1588	Fe I	CA	$b^3F_3 - w^3D_3$
25	3754.2156	3755.2826	Ne I	KE		80	3824.3060	3825.3912	Fe I	CA	$b^3H_4 - w^3H_4$
6	3756.0671	3757.1346	Fe I	CA	$a^5P_3 - w^5F_3$	2500	3824.4436	3825.5288	Fe I	CA	$a^5D_4 - z^5D_3$
15	3756.9364	3758.0041	Fe I	CA	$a^1H_5 - v^3H_5$	1500	3825.8805	3826.9661	Fe I	CA	$a^5F_4 - y^5D_3$
5	3757.4529	3758.5207	Fe I	CA	$a^3D_2 - z^1P_1$	6	3826.8408	3827.9267	Fe I	CA	$a^3G_4 - v^5F_3$
1500	3758.2324	3759.3005	Fe I	CA	$a^5F_3 - y^5F_3$	25	3827.5720	3828.6581	Fe I	CA	$a^3G_5 - x^3G_5$
400	3760.0491	3761.1176	Fe I	SD	$a^3H_6 - z^3I_7$	1200	3827.8226	3828.9087	Fe I	CA	$a^3F_3 - y^3D_2$
25	3760.5317	3761.6003	Fe I	CA	$a^5P_1 - y^5S_2$	40	3829.4541	3830.5407	Fe I	CA	$a^3D_1 - u^3D_1$
8	3761.4085	3762.4773	Fe I	CA	$b^3F_3 - z^1G_4$	25	3830.7583	3831.8452	Fe I	CA	$b^3F_2 - w^3D_2$
1500	3763.7885	3764.8580	Fe I	CA	$a^5F_2 - y^5F_2$	12	3830.8610	3831.9479	Fe I	CA	$a^3G_5 - x^3G_4$
400	3765.5385	3766.6084	Fe I	SD	$b^3H_6 - y^3I_7$	40	3833.3083	3834.3958	Fe I	CA	$b^3F_4 - u^5D_4$
80	3766.260	3767.330	Ne II	CP		1000	3834.2222	3835.3100	Fe I	CA	$a^5F_3 - y^5D_2$
600	3767.1914	3768.2618	Fe I	CA	$a^5F_1 - y^5F_1$	40	3836.3301	3837.4185	Fe I	CA	$a^3D_2 - t^3D_2$
6	3768.027	3769.098	Fe I	BW	$a^5P_1 - w^5D_0$	10	3837.1345	3838.2231	Fe I	CA	$b^3F_2 - x^3F_3$
10	3769.9864	3771.0575	Fe I	CA	$z^7P_3 - f^5D_2$	120	3839.2567	3840.3458	Fe I	CA	$a^1G_4 - x^1G_4$
40	3770.3020	3771.3732	Fe I	CA	$a^3G_5 - w^3G_5$	500	3840.4372	3841.5266	Fe I	CA	$a^5F_2 - y^5D_1$
4	3770.410	3771.481	Fe I	P	$a^3H_5 - z^3I_5$	800	3841.0475	3842.1371	Fe I	CA	$a^3F_2 - y^3D_1$
6	3774.8243	3775.8967	Fe I	CA	$a^5P_1 - w^5D_1$	120	3843.2563	3844.3465	Fe I	CA	$a^1G_4 - z^1F_3$
4	3775.8557	3776.9283	Fe I	CA	$a^3G_4 - w^3G_3$	20	3845.1683	3846.2589	Fe I	CA	$a^3P_1 - x^3D_1$
60	3776.4522	3777.5249	Fe I	CA	$a^5P_3 - w^5F_4$	20	3846.4102	3847.5012	Fe I	CA	$a^1H_5 - w^1G_4$
100	3777.134	3778.207	Ne II	CP		80	3846.8002	3847.8913	Fe I	CA	$a^3D_3 - t^3D_3$
6	3777.4498	3778.5228	Fe I	CA	$b^3F_4 - z^3H_4$	200	3849.9591	3851.0510	Fe I	SD	$a^5F_1 - y^5D_0$
8	3778.5090	3779.5823	Fe I	CA	$a^3D_3 - t^3D_2$	120	3850.8174	3851.9095	Fe I	CA	$a^5F_2 - z^3P_2$
3	3778.6962	3779.7696	Fe I	CA	$a^5P_2 - w^5D_2$	25	3852.5729	3853.6654	Fe I	CA	$a^5P_3 - w^5D_4$
10	3781.1855	3782.2595	Fe I	CA	$a^5P_2 - w^5F_3$	10	3854.366	3855.459	Fe I	P	$z^5D_4 - e^5P_3$
5	3785.7070	3786.7822	Fe I	CA	$b^3H_6 - y^3I_6$	2500	3856.3717	3857.4652	Fe I	CA	$a^5D_3 - z^5D_2$
250	3785.946	3787.021	Fe I	P	$a^3H_5 - z^3I_6$	150	3859.2117	3860.3060	Fe I	CA	$a^3H_6 - y^3G_5$
30	3786.1901	3787.2654	Fe I	CA	$b^3P_2 - v^3D_2$	10000	3859.9114	3861.0058	Fe I	CA	$a^5D_4 - z^5D_4$
100	3786.6764	3787.7518	Fe I	ED	$a^5F_1 - z^3P_0$	15	3861.3363	3862.4311	Fe I	CA	$a^3D_1 - u^3D_2$
250	3787.8800	3788.9557	Fe I	CA	$a^5F_1 - y^5F_2$	15	3861.3459	3862.4408	Fe I	CA	$a^3G_5 - v^5F_5$
10	3789.1758	3790.2518	Fe I	CA	$a^3G_4 - z^1H_5$	3	3861.5920	3862.6869	Fe I	CA	$a^3D_2 - u^3D_1$
250	3790.0923	3791.1686	Fe I	CA	$a^5F_2 - z^3P_1$	15	3863.7408	3864.8362	Fe I	CA	$a^3G_5 - w^5G_4$
50	3792.1539	3793.2308	Fe I	CA	$a^3G_4 - w^3G_4$	150	3865.5230	3866.6190	Fe I	CA	$a^5F_1 - y^5D_1$
10	3793.4813	3794.5585	Fe I	CA	$z^7P_3 - f^5D_3$	60	3867.2152	3868.3116	Fe I	CA	$c^3P_2 - w^3P_2$
8	3793.8722	3794.9495	Fe I	CA	$b^3P_1 - v^3D_1$	25	3869.5588	3870.6557	Fe I	CA	$a^3G_4 - x^3G_5$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
0	3869.6073	3870.7043	Fe I	CA	$a^3G_4 - x^3G_3$	10	3941.2756	3942.3913	Fe I	CA	$z^5D_2 - f^5F_2$
20	3871.7489	3872.8465	Fe I	CA	$b^3G_5 - y^3H_5$	12	3942.4390	3943.5550	Fe I	CA	$b^3P_1 - x^3P_2$
250	3872.5009	3873.5987	Fe I	CA	$a^5F_2 - y^5D_2$	10	3943.3388	3944.4550	Fe I	CA	$a^5P_2 - x^5P_1$
10	3872.9203	3874.0182	Fe I	CA	$a^3G_4 - x^3G_4$	8	3944.8901	3946.0067	Fe I	CA	$b^3G_4 - v^3G_5$
150	3873.7608	3874.8589	Fe I	CA	$a^3H_5 - y^3G_4$	15	3945.1167	3946.2334	Fe I	CA	$a^3G_3 - w^5G_4$
10	3876.0395	3877.1382	Fe I	CA	$a^5F_1 - z^3P_2$	10	3946.9939	3948.1110	Fe I	CA	$z^5D_4 - e^7G_5$
250	3878.0176	3879.1168	Fe I	CA	$a^5F_3 - y^5D_3$	10	3947.5068	3948.6241	Fe I	CA	$b^3G_5 - w^3F_4$
2000	3878.5730	3879.6723	Fe I	CA	$a^5D_2 - z^5D_1$	10	3947.5313	3948.6486	Fe I	CA	$b^3P_2 - v^5P_2$
5	3878.6703	3879.7697	Fe I	CA	$a^3H_4 - y^3G_3$	25	3948.0964	3949.2138	Fe I	CA	$z^5D_3 - f^5F_4$
4	3878.7293	3879.8287	Fe I	CA	$a^3D_1 - t^3D_1$	60	3948.7740	3949.8916	Fe I	CA	$b^3H_5 - u^5G_4$
20	3883.2826	3884.3831	Fe I	CA	$a^3D_3 - u^3D_3$	60	3949.9527	3951.0707	Fe I	CA	$a^5P_3 - x^5P_2$
40	3884.3580	3885.4588	Fe I	CA	$a^3G_5 - z^1G_4$	50	3951.1636	3952.2819	Fe I	CA	$a^3D_1 - y^1D_2$
40	3885.5095	3886.6107	Fe I	CA	$a^3P_1 - x^3D_2$	50	3952.6014	3953.7200	Fe I	CA	$a^3G_5 - z^3H_5$
4000	3886.2820	3887.3833	Fe I	CA	$a^5D_3 - z^5D_3$	12	3953.1516	3954.2704	Fe I	CA	$b^3G_3 - v^3G_4$
200	3887.0477	3888.1492	Fe I	CA	$a^5F_4 - y^5D_4$	10	3955.3416	3956.4609	Fe I	CA	$z^5D_1 - f^5F_1$
0	3888.4166	3889.5185	Fe I	CA	$z^5D_2 - g^5D_2$	6	3955.9560	3957.0755	Fe I	CA	$c^3P_1 - w^3F_1$
300	3888.5134	3889.6153	Fe I	CA	$a^3F_2 - y^3D_2$	60	3956.4544	3957.5740	Fe I	CA	$b^3H_6 - u^3G_5$
25	3888.8216	3889.9236	Fe I	CA	$c^3P_2 - w^3P_1$	250	3956.6769	3957.7966	Fe I	SD	$a^3G_5 - z^3H_6$
20	3890.8414	3891.9439	Fe I	CA	$a^3G_4 - w^5G_3$	25	3957.0172	3958.1369	Fe I	CA	$z^5D_2 - f^5F_3$
15	3891.9263	3893.0291	Fe I	CA	$a^1P_1 - z^1P_1$	20	3963.1006	3964.2220	Fe I	CA	$z^5D_1 - f^5F_2$
10	3893.3089	3894.4120	Fe I	CA	$b^3P_2 - x^3P_1$	5	3964.5152	3965.6370	Fe I	CA	$b^3P_1 - v^5P_2$
50	3893.3909	3894.4941	Fe I	CA	$b^3G_5 - v^3G_5$	25	3966.0610	3967.1832	Fe I	CA	$a^3F_2 - y^3D_3$
15	3893.9119	3895.0152	Fe I	CA	$a^3H_5 - y^3G_5$	10	3966.4998	3967.6220	Fe I	CA	$z^5D_0 - f^5F_1$
10	3894.0137	3895.1171	Fe I	CA	$a^3D_2 - u^3D_2$	60	3966.6139	3967.7362	Fe I	CA	$a^3G_3 - z^1G_4$
800	3895.6558	3896.7596	Fe I	CA	$a^5D_1 - z^5D_0$	60	3966.6278	3967.7501	Fe I	CA	$z^5D_4 - f^5F_5$
8	3897.4488	3898.5530	Fe I	CA	$b^3G_5 - y^3H_6$	12	3967.4198	3968.5423	Fe I	CA	$b^3H_4 - u^3G_3$
50	3897.8900	3898.9944	Fe I	CA	$a^3G_5 - w^5G_6$	2	3967.9610	3969.0836	Fe I	CA	$z^5D_3 - e^7G_4$
40	3898.0088	3899.1132	Fe I	CA	$a^5F_1 - y^5D_2$	100	3969.2570	3970.3800	Fe I	CA	$a^3F_4 - y^3F_3$
15	3899.0282	3900.1329	Fe I	CA	$a^3H_4 - y^3G_4$	15	3969.6282	3970.7513	Fe I	CA	$a^3D_3 - 4_4$
1200	3899.7073	3900.8121	Fe I	CA	$a^5D_2 - z^5D_2$	15	3970.3892	3971.5124	Fe I	CA	$c^3P_1 - w^3P_0$
400	3902.9452	3904.0509	Fe I	CA	$a^3F_3 - y^3D_3$	30	3971.3215	3972.4450	Fe I	CA	$a^3G_5 - x^3F_4$
15	3903.8990	3905.0049	Fe I	CA	$b^3G_4 - y^3H_4$	10	3973.6494	3974.7735	Fe I	CA	$a^1D_2 - x^1F_3$
250	3906.4794	3907.5859	Fe I	CA	$a^5D_1 - z^5D_1$	15	3976.6138	3977.7387	Fe I	CA	$a^1P_1 - t^3D_2$
10	3906.7468	3907.8535	Fe I	CA	$a^3D_2 - t^3D_3$	12	3976.8628	3977.9878	Fe I	CA	$a^3D_2 - x^1D_2$
10	3907.4654	3908.5722	Fe I	CA	$a^3G_3 - x^3G_3$	80	3977.7407	3978.8659	Fe I	CA	$a^5P_2 - x^5P_2$
30	3907.9340	3909.0410	Fe I	CA	$a^3G_3 - w^3G_3$	40	3981.7711	3982.8973	Fe I	CA	$a^3G_4 - z^3H_4$
12	3909.8285	3910.9359	Fe I	CA	$b^3P_1 - x^3P_1$	50	3983.9561	3985.0829	Fe I	CA	$a^3G_4 - x^3F_3$
15	3910.8435	3911.9513	Fe I	CA	$a^3G_3 - x^3G_4$	10	3985.3858	3986.5130	Fe I	CA	$a^3D_2 - y^1D_2$
8	3913.6311	3914.7396	Fe I	CA	$a^3P_2 - w^5D_3$	25	3986.1711	3987.2985	Fe I	CA	$a^3D_3 - v^3F_4$
80	3916.7308	3917.8400	Fe I	CA	$b^3H_6 - 6_5$	25	3986.1784	3987.3058	Fe I	CA	$z^5D_4 - e^5G_4$
15	3917.1802	3918.2896	Fe I	CA	$a^5F_2 - y^5D_3$	6	3990.3733	3991.5018	Fe I	CA	$a^1G_4 - v^3G_4$
20	3918.3148	3919.4245	Fe I	CA	$a^3P_0 - x^3D_1$	60	3994.1138	3995.2433	Fe I	CA	$a^1G_4 - y^3H_5$
25	3918.4161	3919.5258	Fe I	CA	$b^3P_1 - x^3P_0$	12	3995.9822	3997.1121	Fe I	CA	$a^3G_4 - w^3D_3$
30	3918.6419	3919.7517	Fe I	CA	$b^3G_3 - v^3G_3$	8	3996.9654	3998.0956	Fe I	CA	$b^1G_4 - w^1G_4$
12	3919.0655	3920.1754	Fe I	CA	$b^3G_4 - v^3G_4$	200	3997.3919	3998.5222	Fe I	CA	$a^3G_4 - z^3H_5$
600	3920.2577	3921.3679	Fe I	CA	$a^5D_0 - z^5D_1$	40	3998.0527	3999.1831	Fe I	CA	$a^3G_5 - u^5D_4$
1200	3922.9115	3924.0223	Fe I	CA	$a^5D_3 - z^5D_4$	6	4000.4573	4001.5884	Fe I	CA	$b^3G_4 - w^3F_4$
20	3925.6433	3926.7549	Fe I	CA	$b^3P_2 - x^3P_2$	15	4001.6608	4002.7923	Fe I	CA	$a^5P_3 - x^5P_3$
25	3925.9405	3927.0522	Fe I	CA	$b^3P_0 - x^3P_1$	25	4004.8276	4005.9599	Fe I	CA	$b^3H_6 - x^3H_5$
10	3926.0126	3927.1242	Fe I	CA	$z^5D_3 - f^5F_3$	6	4004.9793	4006.1116	Fe I	CA	$c^3P_2 - v^3D_1$
1200	3927.9197	3929.0319	Fe I	CA	$a^5D_1 - z^5D_2$	-6	4004.9842	4006.1165	Fe I	CA	$z^5D_4 - f^7D_3$
0	3928.0829	3929.1952	Fe I	CA	$z^5D_4 - g^5D_4$	400	4005.2414	4006.3737	Fe I	CA	$a^3F_3 - y^3F_2$
6	3929.1181	3930.2306	Fe I	CA	$a^3G_3 - w^5G_3$	20	4006.3109	4007.4436	Fe I	CA	$b^3H_5 - v^3F_4$
6	3929.2070	3930.3195	Fe I	CA	$a^3D_3 - u^3G_4$	10	4006.6249	4007.7577	Fe I	CA	$c^3P_0 - w^3P_1$
2000	3930.2962	3931.4090	Fe I	CA	$a^5D_2 - z^5D_3$	20	4007.2710	4008.4039	Fe I	CA	$a^3G_3 - x^3F_2$
6	3931.1168	3932.2299	Fe I	CA	$z^5D_2 - g^5D_3$	60	4009.7126	4010.8462	Fe I	CA	$a^5P_1 - x^5P_2$
25	3932.626	3933.740	Fe I	P	$a^5G_4 - w^5G_5$	10	4013.8277	4014.9623	Fe I	CA	$c^3P_2 - v^3D_2$
25	3932.626	3933.740	Fe I	P	$a^3D_1 - u^5F_2$	80	4014.5308	4015.6656	Fe I	SD	$a^1H_5 - y^1H_5$
12	3933.5994	3934.7130	Fe I	CA	$c^3P_1 - w^3P_2$	20	4017.1494	4018.2848	Fe I	CA	$a^1G_4 - v^3G_5$
12	3933.6017	3934.7154	Fe I	CA	$z^5D_2 - f^5F_1$	100	4021.8669	4023.0036	Fe I	CA	$a^3G_3 - z^3H_4$
25	3935.8121	3936.9264	Fe I	CA	$b^3P_2 - v^5F_2$	20	4024.7245	4025.8620	Fe I	CA	$z^5D_3 - e^5G_4$
25	3935.8581	3936.9724	Fe I	CA	$z^5D_2 - e^3D_2$	6	4029.6254	4030.7641	Fe I	CA	$z^5D_2 - e^5S_2$
20	3937.3279	3938.4426	Fe I	CA	$a^3G_5 - z^3H_4$	6	4029.6293	4030.7680	Fe I	CA	$z^5D_2 - e^7F_3$
8	3940.8770	3941.9925	Fe I	CA	$a^5F_3 - y^5D_4$	5	4030.1837	4031.3226	Fe I	CA	$a^5P_2 - x^5P_3$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
30	4030.4885	4031.6274	Fe I	CA	$z^5D_4 - e^5G_5$	40	4136.9973	4138.1641	Fe I	CA	$a^1P_1 - y^1D_2$
20	4031.9620	4033.1013	Fe I	CA	$a^3D_1 - v^3F_2$	12	4139.9268	4141.0944	Fe I	CA	$a^5F_2 - z^3F_2$
5	4032.6267	4033.7663	Fe I	CA	$a^3F_4 - y^5P_3$	12	4141.8648	4143.0329	Fe I	CA	$b^3G_3 - w^3G_3$
50	4040.6377	4041.7793	Fe I	CA	$a^3D_2 - v^3F_3$	200	4143.4151	4144.5836	Fe I	CA	$a^1G_4 - y^1G_4$
8	4043.8852	4045.0276	Fe I	CA	$a^3G_4 - u^5D_4$	800	4143.8688	4145.0374	Fe I	CA	$a^3F_3 - y^3F_4$
8	4043.8966	4045.0391	Fe I	CA	$z^5D_3 - f^7D_3$	15	4146.0648	4147.2340	Fe I	CA	$b^3G_4 - w^3G_5$
25	4044.6098	4045.7525	Fe I	CA	$b^3P_2 - y^3S_1$	25	4147.6687	4148.8384	Fe I	CA	$a^3F_4 - z^3G_3$
4000	4045.8130	4046.9560	Fe I	CA	$a^3F_4 - y^3F_4$	15	4149.3653	4150.5354	Fe I	CA	$z^5F_5 - e^7G_6$
5	4046.653	4047.796	Fe I	P	$c^3P_1 - z^1D_2$	2	4149.7598	4150.9300	Fe I	CA	$a^5D_3 - z^7P_2$
6	4054.807	4055.952	Fe I	P		5	4150.2496	4151.4199	Fe I	CA	$z^5F_1 - f^5F_1$
5	4054.8674	4056.0127	Fe I	CA	$z^5F_2 - g^5D_1$	30	4152.1686	4153.3394	Fe I	CA	$a^5F_3 - z^3F_3$
30	4055.0348	4056.1802	Fe I	CA	$b^3F_4 - y^3G_5$	40	4153.8985	4155.0697	Fe I	CA	$z^5F_3 - f^5F_4$
25	4057.3424	4058.4884	Fe I	CA	$a^3G_3 - x^3F_4$	50	4154.4996	4155.6710	Fe I	CA	$b^3P_2 - y^3P_1$
25	4058.2172	4059.3634	Fe I	CA	$z^5D_4 - f^5D_3$	30	4154.8045	4155.9760	Fe I	CA	$z^5F_4 - e^7G_5$
3	4058.7539	4059.9002	Fe I	CA	$a^3P_1 - w^5D_2$	1	4156.6716	4157.8436	Fe I	CA	$b^3G_5 - x^3G_5$
15	4062.4413	4063.5886	Fe I	CA	$b^3P_1 - y^3S_1$	60	4156.7989	4157.9709	Fe I	CA	$b^3P_2 - u^5D_2$
15	4063.2759	4064.4234	Fe I	CA	$z^5F_4 - g^5D_3$	25	4157.7792	4158.9515	Fe I	CA	$z^5F_2 - f^5F_3$
1500	4063.5939	4064.7415	Fe I	CA	$a^3F_3 - y^3F_3$	15	4158.7930	4159.9655	Fe I	CA	$z^5F_1 - f^5F_2$
1	4064.4503	4065.5981	Fe I	CA	$a^3F_3 - y^3P_2$	4	4161.4840	4162.6573	Fe I	CA	$b^3G_3 - w^3G_4$
8	4066.5856	4067.7340	Fe I	CA	$b^3G_4 - y^1G_4$	20	4170.9008	4172.0765	Fe I	CA	$c^3P_2 - x^3P_2$
50	4066.9753	4068.1238	Fe I	CA	$b^3P_2 - l^2$	4	4171.6910	4172.8670	Fe I	CA	$b^1G_4 - x^1F_3$
25	4067.2712	4068.4198	Fe I	CA	$b^3F_4 - x^3D_3$	5	4171.8992	4173.0752	Fe I	CA	$a^3D_2 - z^1F_3$
50	4067.9774	4069.1262	Fe I	CA	$z^5D_4 - e^7P_4$	20	4172.1218	4173.2979	Fe I	CA	$a^3D_3 - w^3P_2$
25	4070.7691	4071.9186	Fe I	CA	$z^5D_3 - f^5D_2$	0	4172.6416	4173.8178	Fe I	CA	$z^5F_5 - e^7F_5$
0	4071.5209	4072.6706	Fe I	CA	$b^3F_3 - y^3G_4$	50	4172.7443	4173.9205	Fe I	CA	$a^5F_3 - z^3D_2$
1200	4071.7372	4072.8869	Fe I	CA	$a^3F_2 - y^3F_2$	5	4173.3153	4174.4917	Fe I	CA	$b^3P_1 - y^3P_1$
25	4073.7617	4074.9120	Fe I	CA	$z^5D_2 - f^5D_1$	20	4173.9211	4175.0976	Fe I	CA	$a^5F_2 - z^3D_1$
20	4074.7857	4075.9362	Fe I	CA	$a^1G_4 - w^3F_4$	60	4174.9121	4176.0888	Fe I	CA	$a^5F_4 - z^3D_3$
8	4076.4896	4077.6406	Fe I	CA	$b^3F_2 - y^3G_3$	50	4175.6355	4176.8125	Fe I	CA	$b^3P_1 - u^5D_2$
40	4076.6286	4077.7796	Fe I	CA	$z^5D_4 - f^5D_4$	25	4176.5679	4177.7452	Fe I	CA	$z^5F_3 - e^7F_2$
5	4076.7989	4077.9499	Fe I	CA	$z^5D_2 - f^7D_3$	50	4177.5931	4178.7706	Fe I	CA	$a^5F_4 - z^3F_4$
15	4078.3535	4079.5050	Fe I	CA	$b^3F_2 - x^3D_1$	120	4181.7544	4182.9330	Fe I	CA	$b^3P_2 - u^5D_3$
20	4079.8384	4080.9903	Fe I	CA	$b^3P_0 - y^3S_1$	20	4182.3817	4183.5605	Fe I	CA	$c^3P_2 - v^5F_2$
6	4080.211	4081.363	Fe I	P	$z^5D_1 - f^5D_0$	50	4184.8913	4186.0707	Fe I	CA	$b^3P_2 - y^3P_2$
25	4084.4914	4085.6445	Fe I	CA	$z^5F_5 - g^5D_4$	120	4187.0384	4188.2184	Fe I	CA	$z^7D_3 - e^7D_2$
30	4085.0049	4086.1581	Fe I	CA	$b^3P_1 - l^2$	120	4187.7947	4188.9749	Fe I	CA	$z^7D_4 - e^7D_3$
20	4085.3024	4086.4557	Fe I	CA	$z^5D_3 - e^7P_3$	80	4191.4296	4192.6107	Fe I	CA	$z^7D_2 - e^7D_1$
4	4087.0934	4088.2472	Fe I	CA	$z^5F_5 - e^7G_4$	8	4191.6772	4192.8584	Fe I	CA	$b^3P_0 - y^3P_1$
15	4089.2172	4090.3715	Fe I	CA	$b^3G_5 - w^3G_5$	40	4195.3292	4196.5113	Fe I	CA	$z^5F_5 - e^5G_5$
25	4091.5534	4092.7083	Fe I	CA	$b^3P_2 - w^3D_1$	3	4195.6177	4196.7999	Fe I	CA	$c^3P_2 - v^5P_2$
30	4092.4564	4093.6116	Fe I	CA	$a^5F_4 - z^3F_3$	20	4196.2075	4197.3898	Fe I	CA	$z^5F_3 - e^5G_3$
15	4095.9707	4097.1268	Fe I	CA	$b^3F_3 - x^3D_2$	0	4198.2464	4199.4294	Fe I	CA	$z^5F_4 - e^5G_4$
15	4098.1760	4099.3327	Fe I	CA	$z^5D_3 - f^5D_3$	150	4198.3036	4199.4865	Fe I	CA	$z^7D_5 - e^7D_4$
40	4100.7374	4101.8948	Fe I	CA	$a^5F_5 - z^3F_4$	12	4198.6360	4199.8191	Fe I	CA	$z^5F_2 - e^5G_2$
8	4104.1118	4105.2700	Fe I	CA	$z^5D_2 - f^5D_2$	40	4199.0949	4200.2781	Fe I	CA	$a^1G_4 - z^1H_5$
40	4107.4888	4108.6479	Fe I	CA	$b^3P_2 - u^5D_1$	12	4199.9827	4201.1661	Fe I	CA	$a^5D_2 - z^7P_2$
30	4109.8020	4110.9618	Fe I	CA	$b^3P_1 - w^3D_1$	20	4200.9239	4202.1075	Fe I	CA	$z^5F_3 - e^7F_4$
10	4112.0878	4113.2481	Fe I	CA	$a^1D_2 - v^3P_2$	300	4202.0286	4203.2125	Fe I	CA	$a^3F_4 - z^3G_4$
6	4112.955	4114.116	Fe I	P	$y^5F_5 - g^5G_6$	8	4202.7526	4203.9367	Fe I	CA	$a^1G_4 - w^3G_4$
20	4114.4457	4115.6066	Fe I	CA	$b^3P_2 - w^3D_2$	8	4202.7629	4203.9470	Fe I	CA	$c^3P_2 - v^5F_3$
150	4118.5442	4119.7062	Fe I	CA	$a^1H_5 - z^1I_6$	4	4203.5694	4204.7537	Fe I	CA	$a^5F_1 - z^3D_1$
20	4120.2064	4121.3688	Fe I	CA	$b^3G_4 - z^1H_5$	0	4203.9385	4205.1229	Fe I	CA	$a^1I_6 - z^1I_6$
20	4121.8022	4122.9650	Fe I	CA	$b^3P_2 - x^3F_3$	40	4203.9840	4205.1684	Fe I	CA	$b^3P_1 - y^3P_2$
15	4122.5133	4123.6763	Fe I	CA	$b^3P_1 - x^3F_2$	4	4205.5397	4206.7245	Fe I	CA	$z^5F_2 - e^7F_2$
15	4123.728	4124.892	Fe I	P		80	4206.6956	4207.8807	Fe I	CA	$a^5D_3 - z^7P_3$
2	4125.8802	4127.0441	Fe I	CA	$b^3P_1 - u^5D_1$	10	4207.1268	4208.3120	Fe I	CA	$b^3P_2 - z^3S_1$
10	4126.1831	4127.3471	Fe I	CA	$z^5F_5 - f^5F_5$	10	4208.5971	4209.7827	Fe I	CA	$z^5F_3 - e^5S_2$
40	4127.6081	4128.7725	Fe I	CA	$b^3P_0 - w^3D_1$	10	4208.6013	4209.7869	Fe I	CA	$z^5F_3 - e^7F_3$
12	4127.813	4128.978	Fe I	P		80	4210.3428	4211.5289	Fe I	CA	$z^7D_1 - e^7D_1$
400	4132.0578	4133.2234	Fe I	CA	$a^3F_2 - y^3F_3$	20	4213.6483	4214.8353	Fe I	CA	$b^3P_1 - y^3P_0$
30	4132.8996	4134.0654	Fe I	CA	$b^3P_1 - w^3D_2$	12	4215.4236	4216.6111	Fe I	CA	$b^3G_4 - x^3G_5$
6	4133.8552	4135.0212	Fe I	CA	$z^5F_4 - g^5D_4$	12	4215.4587	4216.6461	Fe I	CA	$a^3G_3 - x^5G_2$
20	4134.3353	4135.5015	Fe I	CA	$a^5D_4 - z^7P_3$	0	4215.9678	4217.1554	Fe I	CA	$a^3G_5 - y^3G_4$
80	4134.6762	4135.8424	Fe I	CA	$b^3P_2 - w^3D_3$	400	4216.1828	4217.3704	Fe I	CA	$a^5D_4 - z^7P_4$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
15	4217.5477	4218.7357	Fe I	CA	$z^5F_1 - e^5G_2$	3	4326.7516	4327.9682	Fe I	CA	$b^3G_5 - x^3F_4$
100	4219.3600	4220.5484	Fe I	CA	$a^1H_5 - y^3I_6$	20	4327.0937	4328.3105	Fe I	CA	$a^1D_2 - y^1D_2$
12	4220.3434	4221.5321	Fe I	CA	$c^3P_1 - x^3P_0$	30	4337.0457	4338.2651	Fe I	CA	$a^3F_3 - z^5G_3$
50	4222.2124	4223.4016	Fe I	CA	$z^7D_3 - e^7D_3$	5	4343.2754	4344.4964	Fe I	CA	$a^3D_3 - v^3D_2$
25	4224.1725	4225.3622	Fe I	CA	$z^5F_4 - e^7F_5$	5	4343.6962	4344.9173	Fe I	CA	$a^1G_4 - w^5G_4$
8	4224.5137	4225.7036	Fe I	CA	$z^5F_1 - e^7F_2$	4	4346.5526	4347.7745	Fe I	CA	$b^3H_4 - v^3G_4$
20	4225.4533	4226.6433	Fe I	CA	$z^5F_2 - e^5G_3$	2	4348.9370	4350.1595	Fe I	CA	$b^3G_4 - z^3H_4$
50	4225.9563	4227.1464	Fe I	CA	$a^1G_4 - w^5G_5$	8	4351.5436	4352.7668	Fe I	CA	$b^3G_4 - x^3F_3$
10	4226.4233	4227.6137	Fe I	CA	$b^3P_1 - z^3S_1$	80	4352.7340	4353.9575	Fe I	CA	$a^5P_1 - z^5S_2$
200	4227.4235	4228.6141	Fe I	CA	$z^5F_2 - e^7F_1$	6	4358.5006	4359.7257	Fe I	CA	$b^3G_5 - u^5D_4$
3	4229.5116	4230.7027	Fe I	CA	$a^3D_1 - w^3P_1$	25	4367.5781	4368.8056	Fe I	CA	$b^3G_4 - z^3H_5$
3	4229.5330	4230.7241	Fe I	CA	$b^3G_5 - w^5G_5$	2	4367.9026	4369.1301	Fe I	CA	$a^3F_2 - z^5G_2$
1	4229.7533	4230.9445	Fe I	CA	$a^3F_4 - z^5G_3$	80	4369.7707	4370.9988	Fe I	CA	$a^1G_4 - z^1G_4$
6	4231.637	4232.829	Ne II	CP		5	4373.5328	4374.7618	Fe I	CA	$b^3F_4 - w^5D_4$
10	4232.7252	4233.9171	Fe I	CA	$a^5D_1 - z^7P_2$	5	4373.5586	4374.7876	Fe I	CA	$b^3G_3 - x^3F_2$
100	4233.6019	4234.7941	Fe I	CA	$z^7D_1 - e^7D_2$	800	4375.9294	4377.1590	Fe I	CA	$a^5D_4 - z^7F_5$
250	4235.9362	4237.1290	Fe I	CA	$z^7D_4 - e^7D_4$	2	4376.838	4378.068	Fe I	P	
10	4237.0729	4238.2660	Fe I	CA	$a^5F_3 - z^3D_3$	10	4382.7671	4383.9985	Fe I	CA	$a^1H_5 - 6_5$
12	4238.0164	4239.2098	Fe I	CA	$z^5F_2 - e^5S_2$	3000	4383.5445	4384.7761	Fe I	CA	$a^3F_4 - z^5G_5$
12	4238.0207	4239.2141	Fe I	CA	$z^5F_2 - e^7F_3$	12	4387.8927	4389.1255	Fe I	CA	$c^3P_1 - y^3S_1$
50	4238.8092	4240.0028	Fe I	CA	$z^5F_3 - e^5G_4$	15	4388.406	4389.639	Fe I	P	$z^5P_3 - e^5P_3$
25	4239.7323	4240.9261	Fe I	CA	$b^3G_5 - w^5G_6$	15	4389.2445	4390.4776	Fe I	CA	$a^5D_3 - z^7F_2$
5	4239.8344	4241.0282	Fe I	CA	$a^5F_3 - z^3F_4$	15	4390.9506	4392.1841	Fe I	CA	$b^3G_3 - z^3H_4$
5	4239.8473	4241.0412	Fe I	CA	$a^3G_5 - y^3G_5$	8	4401.2896	4402.5259	Fe I	CA	$z^5P_3 - g^5D_3$
4	4240.3720	4241.5660	Fe I	CA	$a^1D_2 - z^3D_1$	3	4401.4423	4402.6787	Fe I	CA	$b^3P_2 - x^3D_1$
4	4242.7291	4243.9237	Fe I	CA	$a^3D_2 - w^3P_2$	1200	4404.7499	4405.9871	Fe I	CA	$a^3F_3 - z^5G_4$
15	4245.2565	4246.4518	Fe I	CA	$b^3P_0 - z^3S_1$	3	4407.7081	4408.9461	Fe I	CA	$a^5P_3 - x^5D_2$
0	4245.3439	4246.5392	Fe I	CA	$z^5F_5 - f^5D_4$	4	4408.4140	4409.6522	Fe I	CA	$a^5P_2 - x^5D_1$
5	4246.0842	4247.2797	Fe I	CA	$b^3D_3 - v^3P_2$	3	4409.1209	4410.3592	Fe I	CA	$a^3D_2 - v^3D_1$
50	4247.4255	4248.6213	Fe I	CA	$z^5F_4 - e^5G_5$	0	4414.471	4415.711	Fe I	P	$a^3D_1 - 2_2$
10	4248.2242	4249.4202	Fe I	CA	$c^3P_1 - x^3P_2$	300	4415.1222	4416.3622	Fe I	CA	$a^3F_2 - z^5G_3$
200	4250.1181	4251.3146	Fe I	CA	$z^7D_2 - e^7D_3$	0	4418.4194	4419.6602	Fe I	CA	$b^3G_4 - u^5D_3$
300	4250.7866	4251.9833	Fe I	CA	$a^3F_3 - z^3G_3$	25	4422.5670	4423.8089	Fe I	CA	$b^3P_1 - x^3D_1$
2	4255.4999	4256.6979	Fe I	CA	$b^3G_3 - w^5G_2$	1	4423.1408	4424.3829	Fe I	CA	$b^3G_4 - u^5D_4$
40	4258.3147	4259.5133	Fe I	CA	$a^5D_2 - z^7P_3$	1	4423.8420	4425.0843	Fe I	CA	$z^5P_2 - e^5P_2$
3	4258.9502	4260.1491	Fe I	CA	$b^3G_3 - x^3G_4$	1	4424.1867	4425.4291	Fe I	CA	$a^1D_2 - v^3F_2$
6	4259.999	4261.198	Fe I	P		1	4425.6572	4426.8999	Fe I	CA	$a^1H_5 - 4_4$
6	4260.1353	4261.3345	Fe I	CA	$c^3P_1 - v^5F_2$	0	4525.8628	4527.1320	Fe I	CA	$z^7F_1 - e^5D_2$
800	4260.4733	4261.6725	Fe I	CA	$z^7D_5 - e^7D_5$	600	4427.2990	4428.5421	Fe I	CA	$z^5P_2 - g^5D_2$
4	4264.2031	4265.4033	Fe I	CA	$z^5F_4 - e^7P_3$	600	4427.3088	4428.5520	Fe I	CA	$a^5D_3 - z^7F_4$
15	4266.9644	4268.1654	Fe I	CA	$a^3G_4 - y^3G_4$	2	4430.1896	4431.4335	Fe I	CA	$c^3P_2 - y^3P_1$
12	4267.8264	4269.0276	Fe I	CA	$c^3P_0 - x^3P_1$	5	4430.6142	4431.8583	Fe I	CA	$a^5P_1 - x^5D_0$
5	4268.7491	4269.9505	Fe I	CA	$a^3D_2 - w^3P_1$	3	4432.5659	4433.8105	Fe I	CA	$a^1H_5 - u^3G_5$
3	4270.2674	4271.4696	Ne I	BA		12	4433.216	4434.460	Fe I	P	$z^5P_2 - e^5P_1$
250	4271.1530	4272.3551	Fe I	CA	$z^7D_3 - e^7D_4$	4	4433.7813	4435.0261	Fe I	CA	$z^5P_3 - f^5F_3$
1200	4271.7593	4272.9615	Fe I	CA	$a^3F_4 - z^3G_5$	30	4435.1485	4436.3937	Fe I	CA	$a^5D_2 - z^7F_1$
1200	4282.4021	4283.6072	Fe I	CA	$a^5P_3 - z^5S_2$	2	4436.9208	4438.1665	Fe I	CA	$a^1G_4 - z^3H_4$
12	4285.4420	4286.6478	Fe I	CA	$b^3H_6 - y^3H_6$	1	4438.344	4439.590	Fe I	P	$z^5P_1 - g^5D_0$
10	4288.1459	4289.3524	Fe I	CA	$a^3G_3 - y^3G_3$	1	4439.6340	4440.8804	Fe I	CA	$a^1G_4 - x^3F_3$
10	4290.3778	4291.5849	Fe I	CA	$b^3G_4 - w^5G_5$	2	4439.8809	4441.1274	Fe I	CA	$a^3P_2 - z^5S_2$
80	4291.4625	4292.6699	Fe I	CA	$a^5D_3 - z^7P_4$	0	4440.4807	4441.7274	Fe I	CA	$z^5P_3 - e^7S_3$
12	4294.1243	4295.3324	Fe I	CA	$a^3F_4 - z^5G_4$	1	4440.822	4442.068	Fe I	P	$z^3D_1 - f^3D_1$
20	4298.0370	4299.2461	Fe I	CA	$a^1G_4 - x^3G_5$	1	4440.9682	4442.2150	Fe I	CA	$a^3D_2 - v^3D_3$
250	4299.2337	4300.4432	Fe I	CA	$z^7D_4 - e^7D_5$	2	4442.3379	4443.5851	Fe I	CA	$a^5P_2 - x^5D_2$
250	4299.2414	4300.4508	Fe I	CA	$b^3H_5 - y^3H_5$	10	4442.8308	4444.0781	Fe I	CA	$a^5P_3 - y^7P_2$
10	4302.1845	4303.3948	Fe I	CA	$a^1G_4 - x^3G_4$	30	4443.1930	4444.4404	Fe I	CA	$b^3P_0 - x^3D_1$
4	4304.5401	4305.7510	Fe I	CA	$b^3G_5 - z^3H_5$	2	4445.4705	4446.7185	Fe I	CA	$a^5D_2 - z^7F_2$
15	4305.4509	4306.6620	Fe I	CA	$c^3P_2 - y^3S_1$	2	4446.8330	4448.0813	Fe I	CA	$z^5P_1 - g^5D_1$
1200	4307.9015	4309.1132	Fe I	CA	$a^3F_3 - z^3G_4$	6	4447.1294	4448.3778	Fe I	CA	$a^5P_2 - y^7P_3$
10	4309.0314	4310.2434	Fe I	CA	$a^1I_6 - y^3I_6$	10	4447.7179	4448.9664	Fe I	CA	$a^5P_1 - x^5D_1$
30	4309.3739	4310.5860	Fe I	ED	$b^3G_5 - z^3H_6$	10	4450.3174	4451.5666	Fe I	CA	$c^3P_0 - y^3S_1$
150	4315.0837	4316.2974	Fe I	CA	$a^5P_2 - z^5S_2$	0	4542.6964	4543.9700	Fe I	CA	$z^5P_1 - e^3D_2$
2	4324.9471	4326.1633	Fe I	CA	$a^5P_2 - x^5F_3$	8	4454.3800	4455.6303	Fe I	CA	$b^3P_2 - x^3D_2$
1500	4325.7615	4326.9779	Fe I	CA	$a^3F_2 - z^3G_3$	25	4454.3800	4455.6303	Fe I	CA	$b^3P_2 - x^3D_2$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
0	4554.4510	4555.7277	Fe I	CA	$z^7F_3 - e^5D_3$	1	4564.6991	4565.9785	Fe I	CA	$z^5P_2 - e^5G_2$
1	4454.6725	4455.9229	Fe I	CA	$b^3D_1 - x^1D_2$	1	4564.8240	4566.1035	Fe I	CA	$c^3P_1 - y^3P_0$
2	4455.029	4456.280	Fe I	P	$z^3F_4 - f^3D_3$	1	4565.3123	4566.5919	Fe I	CA	$a^3D_1 - x^3P_2$
8	4456.3255	4457.5763	Fe I	CA	$a^1G_4 - z^3H_5$	1	4565.6625	4566.9421	Fe I	CA	$z^5D_3 - e^5F_2$
3	4458.086	4459.337	Fe I	P	$z^3D_3 - f^3D_3$	1	4566.5143	4567.7942	Fe I	CA	$a^3D_2 - x^3P_1$
15	4459.1176	4460.3692	Fe I	CA	$a^5P_3 - x^5D_3$	1	4566.9915	4568.2715	Fe I	CA	$a^1P_1 - w^3F_2$
400	4461.6521	4462.9043	Fe I	CA	$a^5D_2 - z^7F_3$	5	4568.7643	4570.0448	Fe I	CA	$z^5D_2 - e^5F_1$
2	4464.7654	4466.0184	Fe I	CA	$c^3P_2 - y^3P_2$	1	4572.8602	4574.1417	Fe I	CA	$z^5P_2 - e^7F_2$
0	4465.370	4466.623	Fe I	P	$y^5F_4 - l^5$	1	4574.2143	4575.4962	Fe I	CA	$z^5D_4 - e^5F_3$
120	4466.5508	4467.8044	Fe I	CA	$b^3P_2 - x^3D_3$	4	4574.7170	4575.9991	Fe I	CA	$a^3P_2 - x^5D_2$
1	4466.9392	4468.1928	Fe I	CA	$z^3D_2 - f^3D_2$	1	4575.7822	4577.0646	Fe I	CA	$b^3H_4 - w^3G_3$
25	4469.3742	4470.6285	Fe I	SD	$z^5P_2 - e^5P_3$	0	4579.329	4580.612	Fe I	P	
1	4471.6761	4472.9309	Fe I	CA	$a^5D_1 - z^7F_1$	0	4579.8209	4581.1043	Fe I	CA	$c^3P_1 - z^3S_1$
80	4476.0171	4477.2731	Fe I	CA	$b^3P_1 - x^3D_2$	2	4580.5755	4581.8591	Fe I	CA	$z^5P_2 - e^3D_3$
0	4476.0765	4477.3325	Fe I	CA	$z^5P_1 - e^5P_2$	5	4581.507	4582.791	Fe I	P	$z^5D_3 - e^3F_4$
5	4490.0833	4491.3430	Fe I	CA	$c^3P_2 - z^3S_1$	1	4584.7152	4585.9999	Fe I	CA	$z^5P_3 - f^7D_3$
1	4478.0169	4479.2735	Fe I	CA	$a^5P_2 - y^7P_2$	1	4584.8193	4586.1040	Fe I	CA	$z^5P_3 - e^7P_2$
4	4479.5981	4480.8550	Fe I	CA	$a^1I_6 - 6^5$	1	4587.1280	4588.4133	Fe I	CA	$a^1H_5 - x^1G_4$
4	4479.6156	4480.8726	Fe I	CA	$z^5P_1 - g^5D_2$	6	4592.6506	4593.9374	Fe I	CA	$a^3F_3 - y^5F_3$
2	4480.1352	4481.3923	Fe I	CA	$a^1G_4 - x^3F_4$	0	4593.525	4594.812	Fe I	P	$z^3F_3 - f^5P_2$
1	4481.6093	4482.8668	Fe I	CA	$z^5P_1 - e^3D_1$	5	4595.3583	4596.6459	Fe I	CA	$b^3H_4 - z^1H_5$
80	4482.1690	4483.4267	Fe I	CA	$a^5D_1 - z^7F_2$	2	4596.0604	4597.3481	Fe I	CA	$z^5P_3 - f^7D_4$
200	4482.2518	4483.5094	Fe I	CA	$a^5P_1 - x^5D_2$	0	4596.4139	4597.7017	Fe I	CA	$z^5P_2 - e^5G_3$
2	4482.7386	4483.9964	Fe I	CA	$z^5P_2 - g^5D_3$	4	4598.1177	4599.4060	Fe I	CA	$z^5D_1 - e^5F_1$
12	4484.2194	4485.4776	Fe I	CA	$z^5P_3 - g^5D_4$	3	4600.9323	4602.2213	Fe I	CA	$b^3H_6 - x^3G_5$
5	4485.671	4486.930	Fe I	P	$z^5P_1 - e^5P_1$	1	4602.0002	4603.2895	Fe I	CA	$a^3F_2 - y^5F_1$
4	4488.1343	4489.3935	Fe I	CA	$z^5P_3 - e^7F_2$	12	4602.9401	4604.2296	Fe I	CA	$a^3F_4 - y^5F_5$
1	4488.9049	4490.1643	Fe I	CA	$z^5P_2 - e^3D_2$	0	4603.951	4605.240	Fe I	P	$b^3G_4 - x^5G_4$
50	4489.7389	4490.9985	Fe I	CA	$a^5D_0 - z^7F_1$	6	4607.6439	4608.9347	Fe I	CA	$z^3F_2 - g^5F_3$
0	4492.6766	4493.9370	Fe I	CA	$z^3F_2 - g^5F_1$	10	4611.2835	4612.5753	Fe I	CA	$z^5P_2 - e^5S_2$
0	4493.368	4494.629		P		10	4611.2887	4612.5804	Fe I	CA	$z^5P_2 - e^7F_3$
25	4494.5632	4495.8241	Fe I	CA	$a^5P_2 - x^5D_3$	4	4613.2039	4614.4962	Fe I	CA	$z^5D_0 - e^5F_1$
0	4495.3891	4496.6503	Fe I	CA	$z^7F_0 - e^5D_1$	2	4614.2054	4615.4979	Fe I	CA	$a^3D_2 - v^5P_1$
0	4495.4241	4496.6852	Fe I	CA	$z^3F_4 - h^5D_3$	4	4618.7572	4620.0509	Fe I	CA	$b^3G_5 - y^3G_4$
0	4495.5661	4496.8273	Fe I	CA	$z^5P_3 - e^3D_3$	8	4619.2864	4620.5802	Fe I	CA	$z^5P_3 - f^5D_2$
1	4495.9531	4497.2143	Fe I	CA	$z^5P_2 - e^5F_2$	8	4625.0438	4626.3392	Fe I	CA	$z^5D_3 - e^5F_3$
2	4502.5911	4503.8541	Fe I	CA	$a^1H_5 - x^3H_6$	1	4630.1205	4631.4172	Fe I	CA	$a^3P_2 - x^5D_3$
1	4504.829	4506.092	Fe I	P	$z^5D_2 - e^3F_3$	0	4631.482	4632.779	Fe I	P	$z^5G_4 - 3^4$
5	4514.1840	4515.4501	Fe I	CA	$a^1G_4 - u^5D_4$	2	4632.9111	4634.2085	Fe I	CA	$a^3F_2 - y^5F_2$
0	4515.1645	4516.4308	Fe I	CA	$z^7F_2 - e^5D_2$	0	4633.7552	4635.0529	Fe I	CA	$b^3G_3 - x^5G_3$
2	4517.5259	4518.7929	Fe I	CA	$c^3P_1 - y^3P_1$	1	4635.8458	4637.1440	Fe I	CA	$b^3P_1 - y^5S_2$
1	4518.4319	4519.6991	Fe I	CA	$b^3H_6 - w^3G_5$	8	4637.5034	4638.8021	Fe I	CA	$z^5D_1 - e^5F_2$
1	4523.4004	4524.6689	Fe I	CA	$z^5P_2 - e^7S_3$	8	4638.0091	4639.3079	Fe I	CA	$z^5P_3 - e^7P_3$
15	4525.1413	4526.4103	Fe I	CA	$z^5P_3 - e^5S_2$	4	4643.4633	4644.7636	Fe I	CA	$z^5P_2 - f^7D_2$
15	4525.1462	4526.4152	Fe I	CA	$z^5P_3 - e^7F_3$	30	4647.4329	4648.7342	Fe I	CA	$b^3G_5 - y^3G_5$
1	4526.5620	4527.8314	Fe I	CA	$c^3P_0 - u^5D_1$	1	4649.8196	4651.1216	Fe I	CA	$b^3H_6 - v^5F_5$
0	4527.7829	4529.0526	Fe I	CA	$a^3D_3 - x^3P_2$	15	4654.4974	4655.8006	Fe I	CA	$a^3F_3 - y^5F_4$
50	4528.6133	4529.8832	Fe I	CA	$a^5P_3 - x^5D_4$	15	4654.6086	4655.9118	Fe I	CA	$z^5P_3 - f^5D_3$
6	4529.556	4530.826	Fe I	P	$z^3D_3 - g^5F_4$	15	4654.6290	4655.9322	Fe I	CA	$z^5D_4 - e^5F_4$
12	4531.1474	4532.4179	Fe I	CA	$a^3F_4 - y^5F_4$	6	4656.3936	4657.6973	Ne I	BA	
1	4533.1301	4534.4012	Fe I	CA	$a^3D_1 - x^3P_0$	0	4657.5853	4658.8893	Fe I	CA	$b^3P_1 - w^5D_1$
1	4536.4632	4537.7352	Fe I	CA	$b^3F_3 - y^3G_5$	0	4658.2937	4659.5979	Fe I	CA	$b^3H_5 - x^3G_4$
12	4537.6712	4538.9435	Fe I	CA	$b^3H_5 - z^1H_5$	1	4661.5345	4662.8395	Fe I	CA	$y^5P_3 - 4^2$
0	4538.7494	4540.0219	Fe I	CA	$a^3P_2 - x^5D_1$	3	4661.9699	4663.2751	Fe I	CA	$b^3G_4 - y^3G_3$
0	4541.9428	4543.2162	Fe I	CA	$b^3H_5 - w^3G_4$	1	4663.1784	4664.4839	Fe I	CA	$a^1D_2 - w^3P_1$
1	4542.4114	4543.6849	Fe I	CA	$b^3D_2 - v^3F_3$	15	4667.4528	4668.7594	Fe I	CA	$z^5P_3 - e^7P_4$
0	4547.0170	4548.2918	Fe I	CA	$a^3F_3 - y^5F_2$	12	4668.1323	4669.4391	Fe I	CA	$z^5D_2 - e^5F_3$
25	4547.8462	4549.1211	Fe I	CA	$a^1D_2 - z^1F_3$	4	4669.1724	4670.4794	Fe I	CA	$z^5P_2 - f^5D_1$
0	4551.6491	4552.9250	Fe I	CA	$z^3F_3 - f^5G_4$	4	4673.1626	4674.4707	Fe I	CA	$z^5P_2 - f^7D_3$
5	4552.548	4553.824	Fe I	P		15	4678.8451	4680.1547	Fe I	CA	$z^5P_3 - f^5D_4$
10	4556.1261	4557.4032	Fe I	CA	$z^3F_3 - f^3D_3$	2	4679.222	4680.532	Fe I	P	$z^5F_4 - e^3F_3$
0	4556.9252	4558.2025	Fe I	CA	$a^3D_3 - v^5P_2$	1	4680.2939	4681.6039	Fe I	CA	$a^3F_2 - y^5F_3$
1	4558.111	4559.389	Fe I	P		1	4680.4674	4681.7774	Fe I	CA	$b^3P_0 - w^5D_1$
1	4560.0879	4561.3661	Fe I	CA	$z^5P_3 - e^5G_4$	0	4682.5587	4683.8693	Fe I	CA	$z^7P_4 - e^5D_3$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
1	4683.5607	4684.8716	Fe I	CA	$b^3P_2 - w^5D_2$	0	4809.1371	4810.4812	Fe I	CA	$b^1G_4 - z^1F_3$
1	4687.3855	4688.6974	Fe I	CA	$b^3P_2 - w^5F_3$	0	4809.9404	4811.2848	Fe I	CA	$a^1H_5 - y^3H_5$
1	4690.1354	4691.4480	Fe I	CA	$z^5P_1 - f^7D_1$	5	4810.0640	4811.4084	Ne I	BA	
20	4691.4116	4692.7245	Fe I	CA	$b^3G_4 - y^3G_4$	4	4817.6386	4818.9850	Ne I	BA	
1	4700.1914	4701.5066	Fe I	CA	$b^1G_4 - x^3H_5$	2	4818.7888	4820.134	Ne I	P	
1	4701.0465	4702.3620	Fe I	CA	$z^5P_1 - f^7D_2$	5	4821.9236	4823.2711	Ne I	BA	
25	4704.3949	4705.7113	Ne I	BA		1	4824.1667	4825.5148	Fe I	CA	$b^3D_1 - w^3P_1$
3	4704.947	4706.263	Fe I	P	$z^5P_1 - f^5D_0$	2	4832.7283	4834.0787	Fe I	CA	$b^3D_2 - w^3P_1$
1	4705.4571	4706.7737	Fe I	CA	$a^1D_2 - v^3G_3$	2	4835.8686	4837.2199	Fe I	CA	$y^5D_4 - f^5G_4$
20	4707.2717	4708.5888	Fe I	CA	$z^5D_3 - e^5F_4$	15	4837.3139	4838.6655	Ne I	BA	
1	4707.4875	4708.8047	Fe I	CA	$b^3P_1 - w^5D_2$	2	4838.5130	4839.8649	Fe I	CA	$z^5F_2 - e^5F_1$
30	4708.8619	4710.1795	Ne I	BA		6	4839.5452	4840.8974	Fe I	CA	$b^3H_5 - z^3H_5$
0	4708.9683	4710.2859	Fe I	CA	$b^3D_2 - z^1F_3$	1	4840.3218	4841.6742	Fe I	CA	$y^5D_3 - f^5G_3$
5	4709.0857	4710.4033	Fe I	CA	$z^5P_2 - f^5D_2$	0	4841.782	4843.135	Fe I	P	$y^5D_2 - f^3D_1$
20	4710.0669	4711.3848	Ne I	BA		1	4842.7876	4844.1407	Fe I	CA	$y^5D_4 - e^3G_5$
20	4710.2828	4711.6008	Fe I	CA	$b^3G_3 - y^3G_3$	4	4843.1437	4844.4969	Fe I	CA	$z^5F_3 - e^5F_2$
4	4712.0661	4713.3845	Ne I	BA		2	4844.0128	4845.3662	Fe I	CA	$a^1D_2 - w^3F_3$
2	4714.0679	4715.3869	Fe I	CA	$y^5P_3 - i^5D_2$	1	4845.6474	4847.0012	Fe I	CA	$b^3D_1 - w^3P_0$
2	4714.1910	4715.5100	Fe I	CA	$b^3H_4 - x^3G_3$	3	4855.6718	4857.0283	Fe I	CA	$z^5F_4 - e^5F_3$
15	4715.3466	4716.6659	Ne I	BA		0	4859.125	4860.483	Fe I	P	$y^5D_2 - f^5G_2$
1	4720.9994	4722.3202	Fe I	CA	$b^3G_4 - y^3G_5$	50	4859.7406	4861.0982	Fe I	CA	$z^7F_2 - e^7D_1$
0	4726.1373	4727.4595	Fe I	CA	$z^7P_3 - e^5D_2$	1	4860.983	4862.341	Fe I	P	$z^5F_3 - e^3F_4$
8	4727.3989	4728.7214	Fe I	CA	$z^5P_1 - f^5D_1$	4	4863.6453	4865.0039	Fe I	CA	$z^5F_1 - e^5F_1$
6	4728.5449	4729.8677	Fe I	CA	$z^5P_2 - e^7D_3$	120	4871.3172	4872.6778	Fe I	CA	$z^7F_3 - e^7D_2$
3	4729.0173	4730.3402	Fe I	CA	$c^3F_4 - 12_5$	0	4871.9283	4873.2891	Fe I	CA	$a^3D_3 - u^5D_3$
1	4729.675	4730.998	Fe I	P	$z^5F_3 - e^3F_3$	60	4872.1363	4873.4971	Fe I	CA	$z^7F_1 - e^7D_1$
2	4733.5910	4734.9151	Fe I	CA	$a^3F_4 - y^5D_4$	3	4875.8748	4877.2366	Fe I	CA	$z^5F_5 - e^5F_4$
1	4734.096	4735.420	Fe I	P	$b^1D_2 - w^1D_3$	30	4878.2081	4879.5705	Fe I	CA	$z^7F_0 - e^7D_1$
6	4735.8418	4737.1665	Fe I	CA	$c^3F_4 - t^3G_5$	6	4881.7178	4883.0812	Fe I	CA	$b^3H_4 - z^3H_4$
30	4736.7715	4738.0965	Fe I	CA	$z^5D_4 - e^5F_5$	5	4882.1440	4883.5075	Fe I	CA	$z^5F_2 - e^5F_2$
1	4737.6346	4738.9598	Fe I	CA	$b^3H_5 - z^1G_4$	10	4884.9170	4886.2812	Ne I	BA	
1	4740.3398	4741.6657	Fe I	CA	$b^3G_3 - y^3G_4$	6	4885.4303	4886.7947	Fe I	CA	$z^3F_4 - g^5D_3$
1	4741.064	4742.390	Fe I	P	$z^5F_5 - e^3F_4$	4	4886.336	4887.701	Fe I	P	$y^5D_3 - h^5D_2$
2	4741.5288	4742.8550	Fe I	CA	$b^3P_2 - w^5D_3$	3	4887.1913	4888.5561	Fe I	CA	$y^5D_2 - g^5F_2$
4	4745.8001	4747.1274	Fe I	CA	$z^5P_2 - f^5D_3$	5	4888.6319	4889.9971	Fe I	CA	$y^5D_4 - h^5D_3$
4	4745.8398	4747.1671	Fe I	CA	$y^5D_4 - f^5D_3$	0	4889.0002	4890.3656	Fe I	CA	$a^5P_2 - y^3D_3$
4	4749.9474	4751.2759	Fe I	CA	$y^5P_3 - i^5D_3$	4	4889.1020	4890.4673	Fe I	CA	$z^3D_3 - g^5D_3$
10	4752.7320	4754.0612	Ne I	BA		100	4890.7540	4892.1198	Fe I	CA	$z^7F_2 - e^7D_2$
4	4757.5821	4758.9126	Fe I	CA	$a^3D_1 - 1_2$	250	4891.4919	4892.8579	Fe I	CA	$z^7F_4 - e^7D_3$
4	4757.595	4758.925	Fe I	P	$z^3P_1 - e^3P_1$	3	4892.866	4894.232	Fe I	P	$y^5D_1 - f^3D_1$
1	4765.4795	4766.8121	Fe I	CA	$a^3F_2 - z^3P_2$	1	4896.4377	4897.8050	Fe I	CA	$z^3D_3 - e^3D_2$
0	4768.3183	4769.6516	Fe I	CA	$z^5P_1 - f^5D_2$	30	4903.3087	4904.6778	Fe I	CA	$z^7F_1 - e^7D_2$
4	4768.3967	4769.7300	Fe I	CA	$z^7P_4 - e^5D_4$	1	4905.1336	4906.5032	Fe I	CA	$z^3D_2 - e^5P_2$
0	4771.6961	4773.0303	Fe I	CA	$a^5P_2 - y^3D_2$	3	4907.7328	4909.1031	Fe I	CA	$z^5F_1 - e^5F_2$
4	4772.8303	4774.6487	Fe I	CA	$c^3P_2 - x^3D_2$	3	4909.3840	4910.7548	Fe I	CA	$z^3D_2 - g^5D_2$
1	4776.0690	4777.4044	Fe I	CA	$a^3D_2 - y^3S_1$	8	4910.0150	4911.3859	Fe I	CA	$z^5F_3 - e^5F_3$
1	4776.385	4777.720	Fe I	P	$y^5P_3 - i^5D_4$	5	4910.3254	4911.6964	Fe I	CA	$y^5D_2 - f^5G_3$
1	4779.4423	4780.7786	Fe I	CA	$a^1P_1 - x^3P_0$	5	4910.565	4911.936	Fe I	P	$y^5D_1 - f^5G_2$
1	4785.959	4787.297	Fe I	P	$c^3F_3 - 13_4$	1	4911.7788	4913.1501	Fe I	CA	$z^3D_2 - e^3D_1$
8	4786.8062	4788.1444	Fe I	CA	$c^3P_2 - x^3D_3$	3	4917.2285	4918.6013	Fe I	CA	$y^5D_2 - h^5D_1$
1	4787.8273	4789.1658	Fe I	CA	$z^7P_3 - e^5D_3$	2	4918.011	4919.384	Fe I	P	$y^5D_0 - f^3D_1$
12	4788.7567	4790.0954	Fe I	ED	$b^3H_6 - z^3H_6$	150	4918.9925	4920.3658	Fe I	CA	$z^7F_3 - e^7D_3$
25	4789.6499	4790.9889	Fe I	FE	$a^1D_2 - z^1D_2$	500	4920.5018	4921.8754	Fe I	CA	$z^7F_5 - e^7D_4$
1	4791.2502	4792.5896	Fe I	CA	$a^3D_1 - w^3D_1$	6	4924.7699	4926.1447	Fe I	CA	$a^3P_2 - y^3D_2$
3	4798.264	4799.605	Fe I	P	$c^3F_2 - t^3G_3$	3	4927.4170	4928.7925	Fe I	CA	$a^1H_5 - w^3F_4$
0	4798.7311	4800.0725	Fe I	CA	$a^3F_2 - y^3D_2$	3	4930.3148	4931.6910	Fe I	CA	$z^3D_1 - g^5D_1$
1	4799.4057	4800.7472	Fe I	CA	$b^3D_2 - w^3P_2$	0	4933.1927	4934.5698	Fe I	CA	$y^5D_2 - f^3D_2$
1	4800.1281	4801.4699	Fe I	CA	$z^7P_2 - e^5D_2$	5	4933.346	4934.723	Fe I	P	$y^5D_0 - g^5F_1$
4	4800.648	4801.990	Fe I	P	$c^3F_3 - t^3G_4$	6	4933.8740	4935.2513	Fe I	CA	$z^3F_3 - e^5P_2$
4	4802.8762	4804.2187	Fe I	CA	$b^1G_4 - x^1G_4$	5	4934.0063	4935.3836	Fe I	CA	$y^5D_3 - f^5G_4$
4	4802.8807	4804.2231	Fe I	CA	$b^3D_3 - w^3P_2$	6	4938.1745	4939.5528	Fe I	CA	$z^3F_3 - g^5D_2$
3	4804.5169	4805.8598	Fe I	CA	$a^1H_5 - v^3G_4$	25	4938.8125	4940.1910	Fe I	CA	$z^7F_2 - e^7D_3$
6	4807.708	4809.052	Fe I	P	$z^5F_4 - e^3F_4$	10	4939.2334	4940.6120	Fe I	CA	$y^5D_1 - g^5F_2$
1	4808.1467	4809.4906	Fe I	CA	$a^3D_3 - w^3D_3$	10	4939.6860	4941.0648	Fe I	CA	$a^5F_5 - z^5F_4$

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
1	4945.6365	4947.0168	Fe I	CA	$z^3P_2 - f^5G_3$	0	5078.971	5080.387	Fe I	FE	$y^5F_1 - f^5G_2$
12	4946.3849	4947.7655	Fe I	CA	$z^5F_4 - e^5F_4$	12	5079.2238	5080.6396	Fe I	CA	$a^5P_2 - y^5P_1$
5	4950.1041	4951.4857	Fe I	CA	$z^5F_2 - e^5F_3$	10	5079.7385	5081.1545	Fe I	CA	$a^5F_2 - z^5F_1$
2	4952.6393	4954.0215	Fe I	CA	$z^3P_2 - h^5D_1$	60	5080.3852	5081.8014	Ne I	BA	
12	4957.2982	4958.6817	Fe I	CA	$z^7F_4 - e^7D_4$	20	5083.3377	5084.7547	Fe I	CA	$a^5F_3 - z^5F_3$
1500	4957.5966	4958.9801	Fe I	CA	$z^7F_6 - e^7D_5$	4	5090.775	5092.194	Fe I	BW	$y^5F_3 - h^5D_2$
2	4962.555	4963.940	Fe I	P	$y^5F_5 - e^3H_6$	5	5096.9978	5098.4184	Fe I	CA	$y^5F_2 - f^5G_3$
25	4966.0872	4967.4730	Fe I	CA	$z^5F_5 - e^5F_5$	4	5098.5705	5099.9915	Fe I	CA	$z^3D_2 - e^3D_3$
10	4967.896	4969.282	Fe I	P	$y^5D_2 - f^5P_1$	8	5098.6990	5100.1201	Fe I	CA	$a^5P_3 - y^5P_2$
4	4968.689	4970.076	Fe I	P	$b^3D_2 - z^1D_2$	0	5104.4362	5105.8587	Fe I	CA	$y^5F_2 - h^5D_1$
6	4969.9157	4971.3025	Fe I	CA	$y^5D_1 - h^5D_1$	15	5107.4464	5108.8697	Fe I	CA	$a^5F_2 - z^5F_2$
3	4970.4986	4971.8856	Fe I	CA	$b^3D_1 - w^3F_2$	5	5107.6408	5109.0643	Fe I	CA	$a^5F_3 - z^3F_2$
10	4973.1005	4974.4881	Fe I	CA	$z^3D_1 - e^3D_1$	5	5109.6497	5111.0736	Fe I	CA	$y^5F_1 - g^5F_2$
6	4978.6037	4979.9928	Fe I	CA	$z^3F_2 - g^5D_1$	150	5110.3573	5111.7814	Fe I	CA	$a^1H_5 - z^1H_5$
25	4982.4977	4983.8878	Fe I	FE	$y^5D_4 - f^5P_3$	150	5110.4125	5111.8366	Fe I	CA	$a^5D_4 - z^7D_4$
15	4983.248	4984.638	Fe I	P	$y^5D_3 - h^5P_2$	20	5113.6724	5115.0978	Ne I	BA	
20	4983.8517	4985.2422	Fe I	FE	$y^5D_4 - h^5D_4$	1	5115.7757	5117.2013	Fe I	CA	$a^1H_5 - w^3G_4$
15	4985.2514	4986.6422	Fe I	CA	$z^3D_2 - e^3D_2$	80	5116.503	5117.929	Ne I	P	
12	4985.5458	4986.9368	Fe I	CA	$z^7F_3 - e^7D_4$	3	5121.6411	5123.0683	Fe I	CA	$y^5F_2 - f^3D_2$
1	4986.2244	4987.6155	Fe I	CA	$y^5D_1 - f^3D_2$	20	5123.7190	5125.1467	Fe I	CA	$a^5F_1 - z^5F_1$
10	4988.9450	4990.3369	Fe I	CA	$y^5D_3 - h^5D_3$	15	5125.1119	5126.5399	Fe I	CA	$y^5F_4 - h^5D_3$
3	4991.2667	4992.6592	Fe I	CA	$y^5D_2 - g^5F_3$	1	5126.1918	5127.6202	Fe I	CA	$y^5F_3 - g^5F_3$
1	4993.676	4995.069	Fe I	P	$z^3P_2 - h^5D_2$	10	5127.3581	5128.7867	Fe I	CA	$a^5F_4 - z^5F_5$
15	4994.1288	4995.5221	Fe I	CA	$a^5F_4 - z^5F_3$	1	5129.6295	5131.0588	Fe I	CA	$z^3F_3 - e^3D_3$
1	4999.114	5000.509	Fe I	P	$c^3F_2 - x^1F_3$	1	5131.4697	5132.8994	Fe I	CA	$a^5P_1 - y^5P_1$
80	5001.8622	5003.2575	Fe I	CA	$z^3F_4 - e^3D_3$	40	5133.6885	5135.1189	Fe I	FE	$y^5F_5 - f^5G_6$
6	5002.7893	5004.1848	Fe I	CA	$z^5F_3 - e^5F_4$	12	5137.380	5138.812	Fe I	P	$y^5F_5 - h^5D_4$
4	5004.036	5005.432	Fe I	P	$z^3P_2 - f^5P_1$	40	5139.2507	5140.6826	Fe I	CA	$z^7P_3 - e^7D_2$
40	5005.1587	5006.5553	Ne I	BA		100	5139.4621	5140.8940	Fe I	CA	$z^7P_4 - e^7D_4$
30	5005.7110	5007.1073	Fe I	CA	$z^3D_3 - e^3D_3$	2	5141.7387	5143.1712	Fe I	CA	$a^3P_1 - y^3D_1$
100	5006.1175	5007.5140	Fe I	CA	$z^7F_5 - e^7D_5$	10	5142.4928	5143.9255	Fe I	CA	$y^5F_1 - h^5D_1$
10	5007.2463	5008.6431	Fe I	CA	$z^3F_3 - g^5D_3$	10	5142.9275	5144.3603	Fe I	CA	$a^5F_3 - z^5F_4$
60	5012.0674	5013.4654	Fe I	CA	$a^5F_5 - z^5F_5$	0	5145.0945	5146.5279	Fe I	CA	$a^5P_2 - y^5P_2$
30	5014.9412	5016.3399	Fe I	CA	$z^3F_3 - e^3D_2$	4	5148.048	5149.482	Fe I	P	$y^5F_2 - h^5D_2$
15	5022.2353	5023.6360	Fe I	CA	$z^3F_2 - e^3D_1$	6	5148.220	5149.654	Fe I	P	$y^5F_3 - f^3D_3$
3	5023.4984	5024.8994	Fe I	CA	$z^5G_5 - f^3F_4$	3	5150.8385	5152.2734	Fe I	CA	$a^5F_2 - z^5F_3$
12	5027.122	5028.524	Fe I	BW	$y^5D_3 - e^5F_4$	25	5151.9101	5153.3453	Fe I	CA	$a^5F_1 - z^5F_2$
0	5027.2257	5028.6278	Fe I	CA	$b^3D_2 - w^3F_3$	25	5151.9610	5153.3976	Ne I	BA	
1	5027.7558	5029.1580	Fe I	CA	$z^3P_2 - g^5P_1$	4	5159.058	5160.495	Fe I	P	$y^5F_2 - f^5P_1$
12	5028.1260	5029.5283	Fe I	CA	$a^1H_5 - y^1G_4$	30	5162.2710	5163.7090	Fe I	FE	$y^5F_5 - g^5F_5$
2	5029.6211	5031.0237	Fe I	CA	$a^1P_1 - l^2$	1	5164.552	5165.991	Fe I	P	$z^3G_4 - f^3F_3$
25	5030.772	5032.175	Fe I	P	$b^3H_6 - z^3I_7$	6	5165.411	5166.850	Fe I	BW	$y^5F_4 - g^5F_4$
25	5031.3504	5032.7539	Ne I	BA		80	5166.2814	5167.7204	Fe I	CA	$a^5D_4 - z^7D_5$
100	5037.7512	5039.1560	Ne I	BA		2500	5167.4873	5168.9267	Fe I	CA	$a^3F_4 - z^3D_3$
4	5039.2501	5040.6554	Fe I	CA	$z^5F_4 - e^5F_5$	80	5168.8968	5170.3366	Fe I	CA	$a^5D_3 - z^7D_3$
8	5040.8528	5042.2585	Fe I	CA	$y^5F_3 - f^5G_3$	500	5171.5953	5173.0357	Fe I	CA	$a^3F_4 - z^3F_4$
8	5040.898	5042.304	Fe I	P	$y^5F_2 - e^3G_3$	1	5178.8028	5180.2452	Fe I	CA	$z^3G_5 - z^3F_4$
15	5041.0708	5042.4765	Fe I	CA	$a^5F_3 - z^5F_2$	2	5184.2649	5185.7087	Fe I	CA	$y^5F_2 - g^5F_3$
150	5041.7553	5043.1612	Fe I	CA	$a^3F_4 - z^3F_2$	2	5187.908	5189.353	Fe I	P	$c^3F_3 - t^3D_2$
4	5044.2105	5045.6171	Fe I	CA	$z^7F_4 - e^7D_5$	30	5188.6122	5190.0572	Ne I	BA	
4	5048.4331	5049.8408	Fe I	CA	$z^3D_1 - e^3D_2$	50	5191.4545	5192.9002	Fe I	CA	$z^7P_2 - e^7D_1$
30	5049.8193	5051.2273	Fe I	CA	$a^3P_2 - y^3D_3$	80	5192.3433	5193.7893	Fe I	CA	$z^7P_3 - e^7D_3$
30	5051.6336	5053.0421	Fe I	CA	$a^5F_4 - z^5F_4$	200	5194.9412	5196.3878	Fe I	CA	$a^3F_3 - z^3F_3$
1	5054.6415	5056.0508	Fe I	CA	$b^3D_2 - v^3D_3$	10	5195.4732	5196.9200	Fe I	FE	$y^5F_4 - f^5G_5$
1	5060.0780	5061.4888	Fe I	CA	$a^5D_4 - z^7D_3$	4	5196.1020	5197.5490	Fe I	FE	$y^5F_3 - f^5P_2$
20	5065.016	5066.428	Fe I	P	$y^5F_3 - e^3G_4$	2	5198.7114	5200.1591	Fe I	CA	$a^5P_1 - y^5P_2$
4	5065.1935	5066.6056	Fe I	CA	$b^3D_3 - w^3F_4$	8	5202.3351	5203.7837	Fe I	CA	$a^5P_3 - y^5P_3$
3	5067.1508	5068.5634	Fe I	CA	$y^5F_4 - f^5G_4$	30	5203.8962	5205.3453	Ne I	BA	
20	5068.7653	5070.1783	Fe I	CA	$z^7P_4 - e^7D_3$	30	5204.5821	5206.0313	Fe I	CA	$a^5D_2 - z^7D_2$
0	5072.0758	5073.4898	Fe I	CA	$y^5F_2 - g^5F_2$	15	5208.5932	5210.0435	Fe I	CA	$z^5D_3 - e^5D_2$
2	5072.665	5074.079	Fe I	P	$y^5F_4 - f^3D_3$	8	5210.5672	5212.0184	Ne I	BA	
20	5074.2007	5075.6156	Ne I	BA		25	5215.1793	5216.6313	Fe I	CA	$z^5D_2 - e^5D_1$
25	5074.7479	5076.1626	Fe I	CA	$y^5F_4 - e^3G_5$	150	5216.2737	5217.7260	Fe I	CA	$a^3F_2 - z^3F_2$
2	5076.2620	5077.6771	Fe I	CA	$y^5F_1 - g^5F_1$	15	5217.3889	5218.8415	Fe I	CA	$z^5D_4 - e^5D_3$

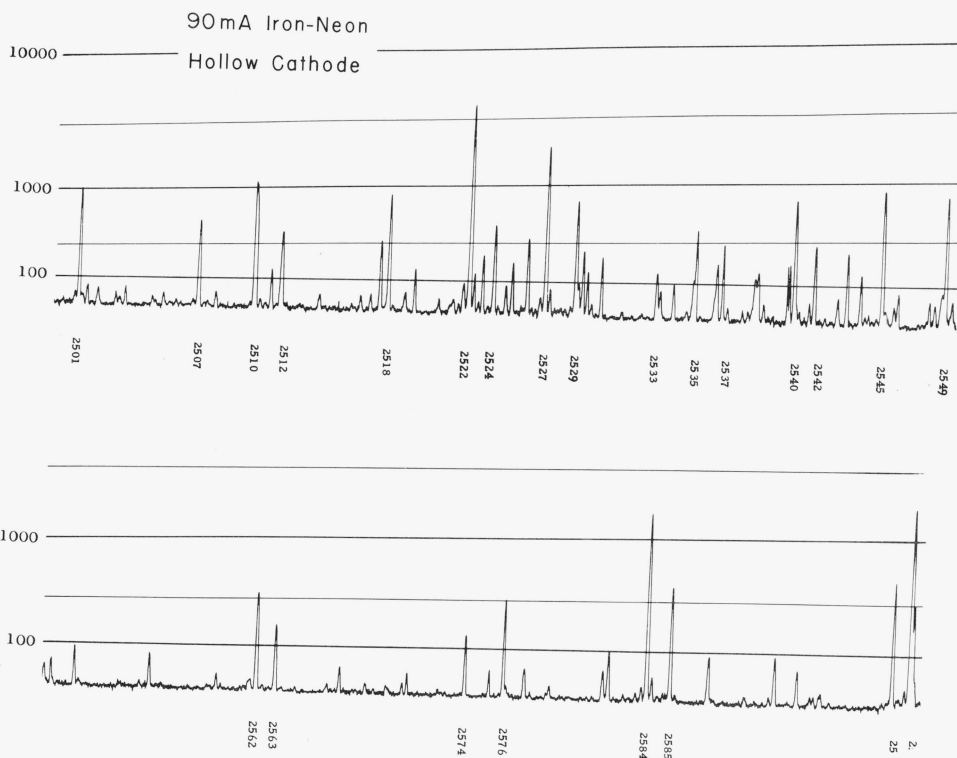
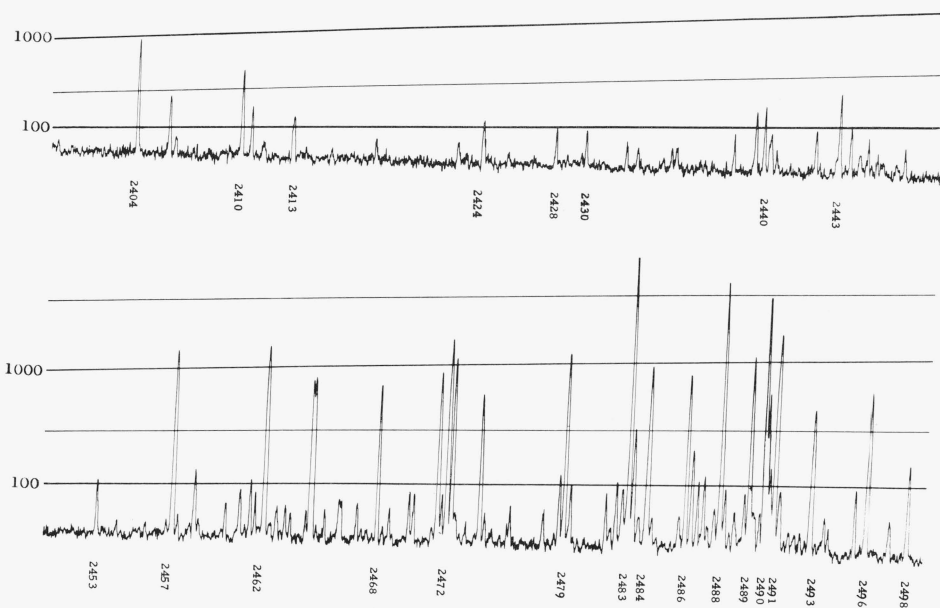
TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
40	5222.3517	5223.8061	Ne I	BA		100	5434.5228	5436.0333	Fe I	CA	$a^5F_1 - z^5D_0$
8	5225.5253	5226.9801	Fe I	CA	$a^5D_1 - z^7D_1$	20	5445.0424	5446.5558	Fe I	CA	$z^3G_5 - e^3G_5$
60	5226.8616	5228.3167	Fe I	CA	$z^7P_2 - e^7D_2$	200	5446.8713	5448.3852	Fe I	CA	$a^3F_2 - z^3D_3$
1000	5227.1502	5228.6054	Fe I	CA	$a^3P_1 - y^3D_2$	200	5446.9161	5448.4300	Fe I	CA	$a^3F_2 - z^3D_2$
1000	5227.1892	5228.6444	Fe I	CA	$a^3F_3 - z^3D_2$	25	5455.453	5456.969	Fe I	BW	$z^5G_6 - f^5G_6$
15	5229.8474	5231.3031	Fe I	FE	$z^5D_1 - e^5D_0$	120	5455.6090	5457.1252	Fe I	CA	$a^5F_1 - z^5D_1$
250	5232.9394	5234.3962	Fe I	CA	$z^7P_4 - e^7D_5$	8	5462.9601	5464.4782	Fe I	FE	$z^3G_3 - e^3G_3$
5	5235.4166	5236.8741	Fe I	CA	$b^3F_3 - x^5D_3$	15	5463.2749	5464.7931	Fe I	FE	$z^3G_4 - e^3G_4$
15	5242.4907	5243.9500	Fe I	CA	$a^1I_6 - z^1H_5$	4	5466.3897	5467.9088	Fe I	CA	$z^5G_4 - h^5D_3$
2	5243.783	5245.243	Fe I	P	$y^5F_3 - g^5F_4$	6	5473.9003	5475.4213	Fe I	CA	$y^5D_3 - g^5D_3$
10	5247.0488	5248.5093	Fe I	CA	$a^5D_2 - z^7D_3$	12	5476.5634	5478.0851	Fe I	CA	$y^5D_4 - g^5D_4$
2	5250.2083	5251.6697	Fe I	CA	$a^5D_0 - z^7D_1$	6	5487.7433	5489.2681	Fe I	FE	$c^3F_3 - t^5D_2$
6	5250.6447	5252.1062	Fe I	CA	$a^5P_2 - y^5P_3$	6	5494.4613	5495.9879	Fe I	CA	$c^3F_4 - x^3H_5$
12	5253.4610	5254.9233	Fe I	CA	$z^5D_1 - e^5D_1$	25	5497.5160	5499.0434	Fe I	CA	$a^5F_1 - z^5D_2$
15	5263.3047	5264.7696	Fe I	CA	$z^5D_2 - e^5D_2$	20	5501.4641	5502.9925	Fe I	CA	$a^5F_3 - z^5D_4$
100	5266.5546	5268.0203	Fe I	CA	$z^7P_3 - e^7D_4$	3	5505.8820	5507.4116	Fe I	CA	$z^5G_3 - f^5G_4$
1200	5269.5366	5271.0032	Fe I	CA	$a^5F_5 - z^5D_4$	30	5506.7776	5508.3074	Fe I	CA	$a^5F_2 - z^5D_3$
800	5270.3571	5271.8239	Fe I	CA	$a^3F_2 - z^3D_1$	4	5535.4148	5536.9523	Fe I	CA	$a^3D_3 - w^5F_2$
15	5273.1631	5274.6306	Fe I	CA	$z^5D_0 - e^5D_1$	4	5543.1468	5544.6863	Fe I	CA	$b^1G_4 - x^3G_3$
4	5273.3736	5274.8412	Fe I	CA	$a^3P_0 - y^3D_1$	2	5543.9364	5545.4761	Fe I	CA	$y^5D_1 - g^5D_2$
5	5280.0853	5281.5551	Ne I	BA		6	5554.8932	5556.4359	Fe I	CA	$y^3F_4 - f^3F_4$
30	5281.7894	5283.2592	Fe I	CA	$z^7P_2 - e^7D_3$	50	5562.7662	5564.3114	Ne I	BA	
60	5283.6206	5285.0909	Fe I	CA	$z^5D_3 - e^5D_3$	4	5563.5990	5565.1440	Fe I	CA	$y^5D_2 - g^5D_3$
3	5288.5279	5289.9995	Fe I	CA	$b^1G_4 - y^1G_4$	6	5565.7040	5567.2496	Fe I	FE	$y^3F_3 - f^3F_3$
20	5298.1891	5299.6637	Ne I	BA		30	5569.6177	5571.1644	Fe I	CA	$z^5F_2 - e^5D_1$
25	5302.2989	5303.7742	Fe I	CA	$z^5D_1 - e^5D_2$	60	5572.8412	5574.3887	Fe I	CA	$z^5F_3 - e^5D_2$
12	5304.7580	5306.2353	Ne I	BA		15	5576.0874	5577.6358	Fe I	SD	$z^5F_1 - e^5D_0$
20	5307.3600	5308.8367	Fe I	CA	$a^3F_2 - z^3F_3$	120	5586.7553	5588.3066	Fe I	CA	$z^5F_4 - e^5D_3$
1	5322.0407	5323.5213	Fe I	CA	$a^3P_2 - y^3F_3$	1	5594.6586	5596.2119	Fe I	FE	$y^3F_4 - e^5H_4$
150	5324.1782	5325.6593	Fe I	CA	$z^5D_4 - e^5D_4$	6	5598.2973	5599.8516	Fe I	FE	$y^3F_2 - f^3F_2$
800	5328.0376	5329.5197	Fe I	CA	$a^5F_4 - z^5D_3$	15	5602.9449	5604.5004	Fe I	CA	$z^5F_1 - e^5D_1$
300	5328.5306	5330.0129	Fe I	CA	$a^3F_3 - z^3D_3$	1	5615.2990	5616.8579	Fe I	CA	$b^3F_3 - y^3D_2$
5	5329.9873	5331.4699	Fe I	CA	$c^3F_4 - 6^5$	200	5615.6436	5617.2026	Fe I	CA	$z^5F_5 - e^5D_4$
250	5330.7775	5332.2608	Ne I	BA		20	5624.5413	5626.1026	Fe I	CA	$z^5F_2 - e^5D_2$
100	5332.8987	5334.3822	Fe I	CA	$a^3F_3 - z^3F_4$	15	5652.5664	5654.1352	Ne I	BA	
80	5339.9282	5341.4135	Fe I	CA	$z^5D_2 - e^5D_3$	100	5656.6588	5658.2024	Ne I	BA	
500	5341.0233	5342.5089	Fe I	CA	$a^3F_2 - z^3D_2$	15	5658.8156	5660.3860	Fe I	CA	$z^5F_3 - e^5D_3$
80	5343.2834	5344.7700	Ne I	BA		50	5662.5153	5664.0867	Fe I	CA	$y^5F_5 - g^5D_4$
6	5349.2038	5350.6910	Ne I	BA		80	5689.8163	5691.3955	Ne I	BA	
12	5360.0121	5361.5032	Ne I	BA		0	5701.5448	5703.1267	Fe I	CA	$b^3F_4 - y^3D_3$
25	5364.8717	5366.3637	Fe I	FE	$z^5G_2 - e^5H_3$	0	5709.3777	5710.9617	Fe I	CA	$z^5F_4 - e^5D_4$
20	5365.3963	5366.8884	Fe I	CA	$a^1H_5 - z^1G_4$	50	5719.2248	5720.8119	Ne I	BA	
40	5367.4671	5368.9598	Fe I	SD	$z^5G_3 - e^5H_4$	120	5748.2985	5749.8933	Ne I	BA	
50	5369.9621	5371.4554	Fe I	SD	$z^5G_4 - e^5H_5$	0	5753.1213	5754.7170	Fe I	CA	$z^3P_1 - e^3D_2$
400	5371.4892	5372.9829	Fe I	CA	$a^5F_3 - z^5D_2$	20	5762.9901	5764.5884	Fe I	CA	$z^3P_2 - e^3D_3$
4	5373.7096	5375.2039	Fe I	CA	$z^3G_3 - f^3F_4$	800	5764.4188	5766.0170	Ne I	BA	
4	5379.5740	5381.0699	Fe I	CA	$b^1G_4 - z^1H_5$	0	5775.0795	5776.6811	Fe I	CA	$y^5F_4 - g^5D_4$
60	5383.3689	5384.8658	Fe I	SD	$z^5G_5 - e^5H_6$	120	5804.4496	5806.0595	Ne I	BA	
6	5389.4786	5390.9771	Fe I	CA	$z^5G_3 - f^5G_3$	400	5820.1558	5821.7699	Ne I	BA	
40	5393.1668	5394.6663	Fe I	CA	$z^5D_3 - e^5D_4$	25000	5852.4878	5854.1101	Ne I	KE	
300	5397.1269	5398.6275	Fe I	CA	$a^5F_4 - z^5D_4$	30	5862.3534	5863.9783	Fe I	CA	$y^3F_4 - e^3G_5$
1	5397.6187	5399.1194	Fe I	CA	$a^1I_6 - x^3G_5$	200	5872.8275	5874.4557	Ne I	BA	
0	5400.5022	5402.0037	Fe I	CA	$z^5G_4 - f^5G_4$	10000	5881.8952	5883.5254	Ne I	KE	
600	5400.5617	5402.0632	Ne I	KE		400	5902.4623	5904.0984	Ne I	BA	
5	5403.8182	5405.3206	Fe I	CA	$c^3F_4 - u^3G_5$	150	5906.4294	5908.0666	Ne I	BA	
60	5404.1185	5405.6209	Fe I	FE	$z^5G_5 - f^5G_5$	80	5913.6327	5915.2718	Ne I	BA	
0	5404.1510	5405.6534	Fe I	FE	$z^3G_4 - e^3H_5$	30	5914.1145	5915.7532	Fe I	CA	$y^3F_3 - f^3D_2$
250	5405.7741	5407.2770	Fe I	CA	$a^5F_2 - z^5D_1$	80	5918.9068	5920.5473	Ne I	BA	
30	5410.9101	5412.4143	Fe I	SD	$z^3G_3 - e^3H_4$	12000	5944.8342	5946.4812	Ne I	KE	
60	5415.1997	5416.7051	Fe I	SD	$z^3G_5 - e^3H_6$	50	5961.6228	5963.2748	Ne I	BA	
60	5424.0686	5425.5764	Fe I	SD	$z^5G_6 - e^5H_7$	200	5965.4710	5967.1250	Ne I	BA	
250	5429.6955	5431.2048	Fe I	CA	$a^5F_3 - z^5D_3$	3000	5975.5340	5977.1892	Ne I	KE	
2	5432.9460	5434.4562	Fe I	CA	$z^5G_2 - g^5F_2$	30	5986.9560	5988.6143	Fe I	CA	$y^3D_2 - e^3P_1$
15	5433.6513	5435.1620	Ne I	BA		120	5987.9074	5989.5664	Ne I	BA	

TABLE III. Spectrum of the Fe-Ne hollow cathode—Continued

In- ten- sity	Wavelength (Å)		Ion	Ref	Classification	In- ten- sity	Wavelength (Å)		Ion	Ref	Classification
	Air	Vacuum					Air	Vacuum			
50	5991.6532	5993.3132	Ne I	BA		250	7472.4386	7474.4964	Ne I	KE	
5000	6029.9969	6031.6667	Ne I	KE		2500	7488.8712	7490.9335	Ne I	KE	
40	6065.4820	6067.1614	Fe I	CA	$b^3F_2 - y^3F_2$	40	7495.0593	7497.1233	Fe I	CA	$y^5F_4 - e^5F_4$
12000	6074.3377	6076.0194	Ne I	KE		60	7511.0452	7513.1135	Fe I	CA	$y^5F_5 - e^5F_5$
15000	6096.1631	6097.8507	Ne I	KE		2500	7535.7741	7537.8490	Ne I	BA	
30	6102.1593	6103.8485	Fe I	CA	$y^3D_1 - f^3F_2$	1000	7544.0443	7546.1215	Ne I	BA	
1000	6128.4499	6130.1462	Ne I	KE		12	7748.2733	7750.4056	Fe I	CA	$b^3G_5 - y^3F_4$
40	6136.6144	6138.3128	Fe I	CA	$a^3H_4 - z^3G_3$	15	7839.0546	7841.2114	Ne I	KE	
40	6137.6937	6139.3924	Fe I	CA	$b^3F_3 - y^3F_3$	30	7927.1177	7929.2983	Ne I	KE	
15000	6143.0626	6144.7628	Ne I	KE		100	7936.9961	7939.1793	Ne I	KE	
10000	6163.5939	6165.2996	Ne I	KE		80	7937.1307	7939.3140	Fe I	CA	$z^5G_5 - e^5F_4$
200	6182.1460	6183.8581	Ne I	BA		500	7943.1814	7945.3663	Ne I	KE	
40	6191.5583	6193.2715	Fe I	CA	$a^3H_5 - z^3G_4$	60	7945.9842	7948.1699	Fe I	CA	$a^3P_1 - z^3F_2$
30	6213.4289	6215.1479	Fe I	CA	$a^5P_1 - y^5D_1$	80	7998.9395	8001.1394	Fe I	CA	$z^5G_4 - e^5F_3$
10000	6217.2812	6219.0013	Ne I	KE		60	8046.0466	8048.2593	Fe I	CA	$z^5G_3 - e^5F_2$
30	6219.2794	6221.0000	Fe I	CA	$a^5P_2 - y^5D_2$	400	8082.4581	8084.6806	Ne I	KE	
40	6230.7260	6232.4497	Fe I	CA	$b^3F_4 - y^3F_4$	50	8085.1760	8087.3992	Fe I	CA	$z^5G_2 - e^5F_1$
20	6246.3172	6248.0451	Fe I	CA	$z^5P_3 - e^5D_3$	250	8118.5492	8120.7815	Ne I	KE	
30	6252.5537	6254.2832	Fe I	CA	$a^3H_6 - z^3G_5$	80	8128.9108	8131.1459	Ne I	KE	
10	6265.1312	6266.8641	Fe I	CA	$a^5P_3 - y^5D_3$	1000	8136.4057	8138.6428	Ne I	KE	
15000	6266.4950	6268.2283	Ne I	KE		20	8248.6824	8250.9498	Ne I	KE	
15	6301.4983	6303.2410	Fe I	CA	$z^5P_2 - e^5D_2$	200	8259.3790	8261.6493	Ne I	KE	
10000	6304.7890	6306.5325	Ne I	KE		500	8266.0772	8268.3493	Ne I	KE	
10	6318.0176	6319.7647	Fe I	CA	$a^3H_4 - z^5G_3$	2000	8300.3263	8302.6077	Ne I	KE	
20000	6334.4278	6336.1794	Ne I	KE		120	8327.0526	8329.3412	Fe I	CA	$a^5P_2 - z^5P_1$
15000	6382.9917	6384.7562	Ne I	KE		20	8331.9076	8334.1975	Fe I	CA	$z^5G_5 - e^5F_4$
20	6393.6018	6395.3692	Fe I	CA	$a^3H_5 - z^5G_4$	250	8365.7486	8368.0476	Ne I	KE	
30	6399.9995	6401.7686	Fe I	CA	$z^5P_3 - e^5D_4$	10000	8377.6065	8379.9088	Ne I	KE	
25000	6402.2460	6404.0157	Ne I	KE		120	8387.7700	8390.0750	Fe I	CA	$a^5P_3 - z^5P_2$
20	6411.6468	6413.4191	Fe I	CA	$z^5P_2 - e^5D_3$	1500	8418.4274	8420.7408	Ne I	KE	
15	6421.3487	6423.1241	Fe I	CA	$a^3P_2 - z^3P_2$	300	8463.3575	8465.6830	Ne I	KE	
60	6444.7118	6446.4929	Ne I	BA		30	8468.4042	8470.7310	Fe I	CA	$a^5P_1 - z^5P_1$
60	6494.9807	6496.7753	Fe I	CA	$a^3H_6 - z^5G_5$	80	8484.4435	8486.7746	Ne I	KE	
20000	6506.5281	6508.3259	Ne I	KE		6000	8495.3598	8497.6940	Ne I	KE	
12000	6532.8822	6534.6870	Ne I	KE		15	8514.0694	8516.4086	Fe I	CA	$a^5P_2 - z^5P_2$
12	6546.2385	6548.0470	Fe I	CA	$a^3G_3 - y^3F_2$	100	8544.6959	8547.0433	Ne I	KE	
20	6592.9131	6594.7341	Fe I	CA	$a^3G_4 - y^3F_3$	200	8571.3524	8573.7071	Ne I	KE	
15000	6598.9529	6600.7755	Ne I	KE		3000	8591.2587	8593.6188	Ne I	KE	
150	6652.0927	6653.9295	Ne I	KE		2500	8634.6470	8637.0188	Ne I	KE	
40	6677.9892	6679.8331	Fe I	CA	$a^3G_5 - y^3F_4$	5000	8654.3831	8656.7602	Ne I	KE	
25000	6678.2762	6680.1202	Ne I	KE		60	8661.8978	8664.2769	Fe I	CA	$a^5P_1 - z^5P_2$
20000	6717.0430	6718.8974	Ne I	KE		1000	8679.4925	8681.8765	Ne I	KE	
25000	6929.4673	6931.3788	Ne I	KE		1200	8681.9211	8684.3057	Ne I	KE	
10	6945.2031	6947.1189	Fe I	CA	$a^3P_1 - z^3P_2$	150	8688.6213	8691.0077	Fe I	CA	$a^5P_3 - z^5P_3$
6	6978.8499	6980.7747	Fe I	CA	$a^3P_0 - z^3P_1$	150	8704.1116	8706.5022	Ne I	KE	
4000	7024.0504	7025.9874	Ne I	KE		800	8771.6563	8774.0652	Ne I	KE	
25000	7032.4131	7034.3524	Ne I	KE		4000	8780.6210	8783.0323	Ne I	KE	
200	7051.2923	7053.2366	Ne I	KE		3000	8783.7533	8786.1654	Ne I	KE	
800	7059.1074	7061.0538	Ne I	KE		20	8824.2166	8826.6397	Fe I	CA	$a^5P_2 - z^5P_3$
10000	7173.9381	7175.9155	Ne I	KE		40	8830.9072	8833.3321	Ne I	KE	
30	7207.3809	7209.3673	Fe I	CA	$y^5D_3 - e^5F_4$	1500	8853.8669	8856.2979	Ne I	KE	
20000	7245.1666	7247.1631	Ne I	KE		1000	8865.3063	8867.7405	Ne I	KE	
12	7389.4009	7391.4363	Fe I	CA	$y^5F_1 - e^5F_1$	1000	8865.7552	8868.1895	Ne I	KE	
15	7411.1539	7413.1958	Fe I	CA	$y^5F_2 - e^5F_2$	400	8919.5007	8921.9495	Ne I	BA	
30	7445.7458	7447.7964	Fe I	CA	$y^5F_3 - e^5F_3$	10	8999.5546	9002.0251	Fe I	CA	$^3P_2 - z^3P_2$

90mA Iron-Neon
Hollow Cathode



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